CHANGING CHARACTERISTICS OF HIGH ACCIDENT DRIVERS OVER A FIVE YEAR PERIOD

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BY

JOHN E. GOODSON

JHRP

JOINT HIGHWAY RESEARCH PROJECT
PURDUE UNIVERSITY AND
INDIANA STATE HIGHWAY COMMISSION

Final Report

CHANGING CHARACTERISTICS OF HIGH ACCIDENT DRIVERS OVER A FIVE YEAR PERIOD

by

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Joint Highway Research Project

Project No.: C-36-150

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Conducted By

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Engineering Experiment Station
Purdue University

In Cooperation With

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Purdue University
West Lafayette, Indiana
September 7, 1972

Final Report

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TO: J. F. McLaughlin, Director
Joint Highway Research Project

September 7, 1972

Project: C-36-150

FROM: H. L. Michael, Associate Director
Joint Highway Research Project

File: 8-5-15

The attached Final Report "Changing Characteristics of High Accident Drivers Over a Five Year Period" is submitted as fulfillment of the objectives of the research proposal approved by the Board. The Report was written and the research conducted by Mr. John E. Goodson, Graduate Assistant in Research on our staff, under the direction of Professor H. L. Michael.

The report notes that almost all individuals who had three or more accidents in the year 1967 had a much decreased accident rate in each of the following four years. Only a very few drivers continued to exhibit high accident rates for the next four years and driver or accident characteristics exhibited in 1967 would not have enabled selection of these drivers. There was an indication, however, that following several years of continued accident history an extremely small number of drivers could have been noted who would probably continue to have accidents at a high rate.

The Report is presented to the Board for acceptance as fulfillment of the objectives of the study.

Respectfully submitted,

Harold L. Michael
Associate Director

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ABSTRACT

Goodson, John Earl. MSCE, Purdue University, August, 1972. Changing Characteristics of High Accident Drivers Over a Five Year Period. Major Professor: Harold L. Michael.

The purpose of this research was to determine the number and characteristics of drivers who had a high accident involvement during a particular year. Then, using information available in the accident and driver record files, the changes in their characteristics and accident involvement during the following four year period were determined.

Accident record summaries were collected for the years 1967 through 1971 for all drivers who were identified as having been involved in three or more accidents during the year 1967. Driver record summaries were collected for drivers involved in three or more accidents during the year 1967 and a total of five or more accidents during the entire five year study period. Included in the final analysis were 776 drivers for which both driver and accident record summaries had been obtained and an additional 1288 drivers for which only accident records were collected.

It was found that the accident records of most of the drivers studied exhibited much improvement during the four year period following the base year. Approximately forty

percent of the drivers who were involved in three or more accidents during the base year were identified as having no additional reported accidents during the following four year period.

Using only information available in the accident and driver record files, it was found that it is difficult to predict, with any degree of accuracy, which drivers who were high accident drivers during a particular year would continue to be excessive accident repeaters during following years. Two characteristics studied that appeared to have the greatest value as accident predictors were the number of accidents during a year and the type of license. For the average driver of a high accident group, it was found that as the number of accidents in which he was involved during the base year increased, the probability of his being involved in additional accidents during the following years also increased. Persons with chauffeur's licenses and particularly public passenger chauffeur's licenses were found to share a much greater proportion of the high accident groups than their proportions of the licensed drivers would indicate.

In general, the accident record of a driver during one year, even when combined with information available in the Indiana Drivers Records, does not enable a reasonable prediction of the drivers accident record for future years.

INTRODUCTION

In order to develop an effective accident prevention program it is necessary to know the characteristics of all of the system components involved: the environment, the vehicle, and the driver. The characteristics that are least understood and the most difficult to predict are those of the individual driver, and it is the driver who is held responsible for the great majority of traffic accidents.

Various research reports in this field have presented contradictory statements regarding the characteristics of drivers involved in accidents. For example, according to Waller (18), "Two fallacies have seriously hampered meaningful programs against traffic accidents. The first is the belief that traffic accidents happen to almost everyone. The second is the attitude that most accidents are the result of voluntary violation of traffic laws, and are subject to correction by the issuance of citations." Evidence given by Crancer (4,5,6) indicates that it is the non-average driver that is involved in fatal accidents, while Goldstein (7) states that most accidents occur to normal, average people.

Penn's report (13) summarizes that "The accident process is stated to consist essentially of a driver breakdown of some sort which allows the underlying accident potential

to come into play. In the case of a large body of drivers, this breakdown factor is probably temporary; in other groups of operators, it is more enduring."

Each year a small percentage of drivers are involved in an excessive number of accidents. Very little is known about the characteristics of these drivers or how their accident histories vary over periods of time longer than a year. In a 1946 report by Johnson (9), it was stated that "Operators who are accident-repeaters in one period tend to regress toward the average of the group in another period." This temporary nature of accident proneness is further reinforced by more recent reports of Schuster and Guilford (14) and Campbell (1), but is contradicted by Shaw and Sichel (16) who say, "... The man whose past record has been unsatisfactory is unlikely to improve, punishing him will have very little effect, and retraining him means throwing good money after bad. The only practical way of insuring that he does not have accidents is to prevent him from driving."

It is very probable that the accident-repeater is not the average driver nor the average person. According to Penn (13) "The person likely to become involved in an accident is a disturbed person, at odds with the world around him." It may be that the conditions or circumstances that plague the accident-repeater and involve him in several collisions are the same, at least temporarily, for the average person or driver who has an accident. By studying the records of the accident-repeater, determining his

characteristics and how they change with time, it should be possible to determine accident causative factors that apply to the entire population of drivers. Some such factors may be difficult to pinpoint in the driver that is only occasionally involved in an accident, but may be more apparent in the accident-repeater.

It is recognized that one method of possibly reducing accidents would be to restrict the driving liberty of those who could be classified as accident repeaters. But to provide such restrictions, good evidence of the benefits to society will be necessary. It would be desirable to know the answer to several questions, for example; Why do some individuals have more accidents than other drivers? Does an individual's relative accident involvement rate in one year remain the same in succeeding years or does it increase or decrease? If improvements or deteriorations are noted, what are the causative factors of these changes?

In 1967 there were about 2.7 million drivers licensed in the State of Indiana. During that year, 301,921 drivers were involved in 175,886 reported motor vehicle accidents within the State. During that same year more than two thousand drivers were involved in three or more accidents. It was found that 2064 of these drivers were involved in a total of 6573 reported accidents. Thus less than one tenth of one percent of the total licensed drivers were involved in over 3.7 percent of the accidents that were reported during the year 1967.

While 3.7 percent is not a very large proportion of the total accidents, it is a substantial number. If it could be determined that these high accident drivers were going to continue to become involved in such a large number of accidents during the following years, it would be foolish to allow them to continue as a threat to society. Therefore, this study was directed toward those 2064 individuals who were involved in three or more accidents during the year 1967.

PURPOSE

The objectives of this study were to:

1. Determine the number and characteristics of drivers who had an excessively high accident involvement during a particular year.

2. Evaluate the records of these drivers for a period of years beyond the base year to determine changes which take place over time in accident involvement and in their characteristics.

3. From information available in the accident and driver record files, correlate changes in accident involvement with present or possible corrective procedures, such as revocation of operators permit, drivers training courses, etc.

DATA COLLECTION

A driving record of all persons licensed by the State of Indiana to drive a motor vehicle is maintained by the Bureau of Motor Vehicles. This driving record includes information about the personal characteristics, type of license, and violation citations of each driver. Accidents in which a person is involved are not recorded on the driver record unless the driver was proven responsible for the accident.

A completely separate record of all reported accidents is maintained by a completely separate organization: the Indiana State Police. This record includes driver identification and date, location and type of accident.

Data were collected for two groups of drivers for the purpose of this study. The first group of drivers included all persons who were identified as being involved in three or more accidents during the year 1967. Complete accident record summaries were collected for this group for the years 1967 through 1971. In addition, driver record summaries were collected for all drivers in this group who had a total of five or more accidents during the entire five year study period.

The second group of drivers was selected randomly from the entire population of Indiana drivers. This group of

drivers was selected to serve as a control group to which the multiple accident driver could be compared. Complete accident record summaries for the years 1967 through 1971 were collected for all drivers in the control group. Driver record summaries were also collected for all control group drivers.

High Accident Driver

Accident Record Summaries

Indiana State Law requires that a written report be filed with the State Police within five days of an accident in the event of a death, injury or over fifty dollars damage. The State Police maintain a record of all reported motor vehicle accidents. Unlike the driver record which files all infractions to a particular driver, the accident record treats each accident individually. In other words, a listing is not maintained for each driver giving his individual accident history.

Each year a name listing of drivers involved in traffic accidents during the year is prepared. These name listings identify drivers by their last name, first name and middle initial. Since the year 1967, the name listings have further identified drivers by their date of birth. The last name of each driver is Soundex Coded so that all names that are spelled identically or that sound the same are grouped together. (A more detailed explanation of the Soundex Code will be found in Appendix C). The first name and middle initial are listed alphabetically within each Soundex group.

For each reported accident that a driver has during a particular year, he is listed once in that years accident name listing. Therefore, to determine which drivers had multiple accidents during a particular year it is necessary to search the name listing for that year for multiple listings of drivers with the same identification.

Since 1967 was the first year that accident name listings were maintained that included the date of birth of the driver, that year was selected as the base year for this study. The date of birth was required for the purpose of making positive identification of the drivers. There are approximately one hundred licensed drivers in Indiana that have the same first and last name and middle initial and the same date of birth as another licensed driver. These drivers are distinguished by the notation "Suffix 1" or "Suffix 2" on their driver record. None of these drivers were involved in this study as high accident drivers (three or more accidents in 1967 and five or more accidents 1967-1971).

State Police records show that 301,921 drivers were involved in 175,886 motor vehicle accidents in Indiana during the year 1967 (See Appendix A). A preliminary sampling of the 1967 Accident Name Listing was made to determine the frequency at which multiple accident listings occurred. This preliminary review indicated that roughly one driver had three or more accidents for every one hundred-fifty

accident listings. On this basis the decision was made to limit this study to only those drivers who had three or more reported accidents during the year 1967.

Each of the 301,921 accident name listings for the year 1967 was checked name by name for multiple listings of three accidents or more. Those names found three or more times were then checked for identical birthdates. Once a driver was positively identified as having been involved in three or more accidents during the year 1967, the following information was recorded from the accident name listing (See Appendix C for sample data collection form):

1. Driver's last name, first name, and middle initial;
2. Driver's date of birth;
3. Residence of driver at time of accident;
4. Age of driver at time of accident;
5. City or township in which accident occurred;
6. County in which accident occurred;
7. Date that accident occurred;
8. Type of accident (property damage, injury, or fatal);
9. State Police accident code identification number.

Information was recorded on 2093 drivers who had three or more accidents during the year 1967. Some drivers were found in the accident name listing that appeared to have three or more accidents but no date of birth was listed. Under these circumstances positive identification of the driver was not possible and these names were not included in

the study. It is also possible that a few drivers who had three or more accidents might have been missed due to human error. However, the search for multiple accident drivers was very thorough and if any drivers were missed, the number is very few.

Once the base sample of drivers for the year 1967 was complete, a thorough search was made of the Accident Name Listings for the years 1968, 1969, 1970, and 1971, to determine the additional accidents in which these drivers were involved. Once a driver from the 1967 base sample was positively identified as having been involved in one or more additional accidents during the following four year period, the same accident information was recorded as was for the year 1967.

Driver Record Summaries

Of the base sample of drivers who had three or more accidents in 1967, 805 had a total of five or more accidents during the five year study period. These drivers were selected for a study of their driver record. The names and birthdates of these drivers were submitted to the Bureau of Motor Vehicles. The Bureau then provided copies of the driver record summary for 799 of the 805 drivers. No record could be found for the remaining six drivers. The names and birthdates of these six drivers were rechecked for correctness and then resubmitted to the Bureau of Motor Vehicles. Another search of their files was still unsuccessful in identifying these drivers.

Each driver record summary contains the following information (See Appendix C for sample driver record summary):

1. Residence of driver;
2. Type of license (learner permit, driver education permit, probation operator, chauffeur, public passenger chauffeur);
3. Color of hair and eyes;
4. Sex;
5. Date of birth;
6. Weight and height of driver;
7. Date last license was applied for;
8. Date re-exam due;
9. Date license expires.

In addition to the above information which is recorded on every driver record summary, the following data are recorded where applicable:

1. License restrictions (required to wear glasses, required to have outside rearview mirror, daylight driving only, etc.);
2. Date and changes of license type (operator to chauffeur, driver education to operator, etc.);
3. Convictions for moving violations, type of violation, violation points and date;
4. Convictions for failing to appear for driver instruction, interview or court appearance;
5. Actions taken against drivers (interviews, probation, suspension of license, etc.);

6. Date suspension or probation is closed;
7. If driver has reported an out of state move, date of move and place to where he moved;
8. Deceased drivers noted;
9. Current driving status (clear, on probation, suspended, total active violation points).

The Control Driver Group

In order to have a basis of comparison, a control group of drivers was selected randomly from the entire population of Indiana drivers. This was accomplished through the use of Bureau of Motor Vehicle records.

Accident Record Summaries

A search was made of the accident name listings for each driver in the control group to determine his accident history during the five year study period. When the records indicated that a control driver had been involved in one or more accidents at any time during the five year study period, the same information was recorded as was for the high accident driver.

Driver Record Summaries

Copies of driver record summaries were obtained for each control group driver from the Bureau of Motor Vehicles. The summaries contained the same type of information as those collected for the high accident driver. Complete accident and driver records were collected for a control group of 367 drivers.

Additional Data

Additional statistical information used in this study was taken from the "Standard Summary of Motor Vehicle Traffic Accidents in Indiana." This report is prepared annually by the Indiana State Police. Information was taken from the reports for the years 1967 through 1971. Information concerning total licensed drivers in the state for the years 1967 through 1971 comes from reports prepared by the Bureau of Motor Vehicles (Copies of these reports will be found in Appendix A).

Due to the confidential nature of accident reports and State Laws protecting their confidentiallity, no names or other identifying information were taken from the offices of the State Police. Therefore, once all the data had been collected and assembled, drivers names and other traceable identifying information were removed from the information collected and case study numbers were assigned.

It must be observed that the information recorded on the driver and accident records conveys only a small amount of information about that person's driving performance. Furthermore, a driver may continuously violate traffic laws but will receive a citation which will be recorded on his record only when observed by a law enforcement official or perhaps when involved in an accident. A driver may be involved in many potential accidents-near misses-but is recorded as having an accident only when an accident actually

occurs and damage over fifty dollars results and/or an injury or fatality occurs. Even then it is possible that a driver may have one or more accidents that go unreported.

ANALYSIS OF DATA

High Accident Driver

Drivers in the high accident group were placed into two categories: those who had a total of five accidents or more and for which driver records had been obtained and those who had a total of three or four accidents and for which driver records had not been obtained. The driver record summary of each person in the first group was examined to determine if that person was an Indiana driver during the entire five year study period. When it could be determined from the record that a person was an Indiana driver for less than fifty-four months of the sixty month study period, that driver was eliminated from the study. Methods of determining that a person was not an Indiana driver for the full study period included record notations that indicated he had moved out of state, his license had expired and had never been renewed, or he had died. However, if it was noted that a driver that had moved out of state had subsequent notations on his records for accidents, citations, license renewal, or other reasons, and if any such notation was within six months of his date of move, it was assumed that he had returned to Indiana and he was included in the study. Drivers were not removed from the study due to license suspensions. Twenty three drivers were removed for not being an Indiana

driver for the five year study period.

Of the original 799 drivers for which both driver and accident records were obtained, this total was now reduced to 776. All of these drivers had a total of five or more accidents during the five year study period of which at least three occurred during the year 1967. The following information from the driver and accident records of these drivers was coded and punched onto computer cards:

1. Case number of the driver;
2. Residence of the driver;
3. Index of weight/height of the driver;
4. Age of driver at the time of first accident during the year 1967;
5. Sex;
6. License type;
7. License restrictions;
8. License changes and date of changes;
9. Total violation points during five year period, (An explanation of the violation point system will be found in Appendix B);
10. Total license suspensions during five year period;
11. Total months license was suspended;
12. Total license suspensions during five year period for:
    (a) Driving while intoxicated;
    (b) Failure to appear;

(c) Responsibility for an accident;

(d) Leaving the scene of an accident;

(e) Violation of Implied Consent law;

13. Type, date, and number of points of each violation citation;

14. Date, place, and type of each accident.

Once all of the data were coded, punched onto cards, and verified, computer programs were written to determine the following additional characteristics of each driver:

1. Mean time in days between accidents;
2. Total number of accidents during the five year period;
3. Mean time in days between violation citations;
4. Total violation citations during the five year period;
5. Number of fatal accidents during the five year period;
6. Number of injury accidents during the five year period;
7. Number of property damage only accidents during the five year period;
8. Number of accidents during the year 1967;
9. Number of each of the following during the year 1967:

(a) Total license suspensions;

(b) License suspensions for driving while intoxicated;

(c) License suspensions for failure to appear;

(d) License suspensions for responsibility for an accident;

10. Number of violation citations during the year 1967;

11. Number of serious violation citations during the year 1967.

For the purpose of this study a serious violation was defined as a violation that requires mandatory license suspension or carries five or more violation points. This definition is not intended to convey the idea that other violations are not serious. It is intended to distinguish between violations that may occur accidently or through driver inattention and violations that are nearly always willful. Examples of the possible accidental type of violation include driving the wrong way on a one way street and running a stop sign or traffic signal. Examples of the willful violation, the one being defined as serious, include "drag racing", reckless driving, leaving the scene of an accident, and driving while license is suspended.

License types were initially coded into six categories: operator's license, chauffeur's license, public passenger chauffeur's license, learner's permit, driver education permit, and probation operator's license. In the final analysis the learner's permit, driver education permit, and probation operator's license were all combined under the operator's license category. Thus the final categories of

license type that appear in the analysis are the operator's license, the chauffeur's license, and the public passenger chauffeur's license.

The Control Driver Group

The driving records of all control group drivers were examined using the same criteria as for the high accident driver. A total of forty-one drivers were removed from the control group because it was determined that they were Indiana drivers for less than fifty-four months of the sixty month study period. This left a control group of 326 drivers. With the exception of age, the information was then coded and punched onto computer cards in the exact format as for the high accident driver. The age of the driver was coded as his age on January 1, 1967.

Final Data Groups

The final data for which both accident and driver records were available were organized into four groups as follows:

Group	Number of Drivers in Group
Control Group	326
5 Accident Total	361
6-7 Accident Total	288
$\geq$8 Accident Total	127

In addition to these four main groups, information concerning accident records and age and residence of drivers was available for drivers who had three and four accidents.

RESULTS

The Accident Picture

The search of the 1967 accident records produced 2064 drivers who had three or more accidents in Indiana during that year and who are believed to have been Indiana drivers for most of the five year study period. The number of accidents in which these drivers were involved during that single year ranged from three to nine accidents as shown in Table 1. The group as a whole were involved in a total of 6573 accidents during the year.

Table 1. 1967 Multiple Accident Drivers.

Number of Accidents Per Driver During The Year 1967	Number of Drivers	Total 1967 Accidents	Total Additional Accidents During Following Four Year Period 1968-1971
3	1763	5289	2102
4	241	964	393
5	46	230	131
6	10	60	56
7	3	21	11
8	0	0	0
9	1	9	3
	2064	6573	2696

Looking at the accident record of this same group of drivers for the entire five year study period, 1967 through 1971, it was found that the number of accidents in which the individual drivers were involved ranged from a low of three, all in 1967, to a high of twenty-nine accidents (See Table 2). The group as a whole were involved in 9269 reported accidents during the entire five year study period.

Taken as a group, it is clear that the accident record of these 2064 drivers underwent much improvement during the four year period following the 1967 base year. In 1967, the group had an average of 3.18 accidents per driver while the average per year for the following four year period was 1.30 accidents per driver. In comparison, the control driver was found to have an average of 0.09 accidents per year. This latter figure is shown in Table 3, a summary of important statistics of the drivers in the control group and in the study group. Therefore, taken as a group, the drivers who had three or more accidents in 1967 showed improvement in their accident record during the following four year period, but they still had more than ten times the number of accidents as the average driver would be expected to have.

Table 4 presents some interesting statistics on the accident picture over the 5-year period of the drivers in the study group. Of the group of 1763 drivers who had three accidents in 1967, 728 or 41.3 percent of the group had no additional accidents during the following four year period.

Table 2. Total Accident Involvement During Five Year Study Period 1967-1971 By Drivers Involved in Three or More Accidents in 1967.

Total Accidents Per Driver 1967-1971	Number of Drivers	Total Accidents	Total Accidents Per Driver 1967-1971	Cumulative Number of Drivers
3	728	2184	$\geq$ 3	2064
4	560	2240	$\geq$ 4	1336
5	361	1805	$\geq$ 5	776
6	195	1170	$\geq$ 6	415
7	93	651	$\geq$ 7	220
8	50	400	$\geq$ 8	127
9	38	342	$\geq$ 9	77
10	13	130	$\geq$ 10	39
11	9	99	$\geq$ 11	26
12	7	84	$\geq$ 12	17
13	4	52	$\geq$ 13	10
14	2	28	$\geq$ 14	6
15	1	15	$\geq$ 15	4
.				
.				
.				
17	1	17	$\geq$ 17	3
.				
.				
.				
23	1	23	$\geq$ 23	2
.				
.				
.				
29	1	29	$\geq$ 29	1
		9269		

Table 3. Summary Statistics.

Numbers in Parentheses refer to number of drivers, suspensions or violations upon which percentage or mean is based.

	Control Group 326 Drivers	5 Accident Group* 361 Drivers	6-7 Accident Group* 288 Drivers	≥ 8 Accident Group* 127 Drivers
Percent Male	59.2 (193)	95.6 (345)	94.8 (273)	97.6 (124)
Mean Age	38.7	29.6	29.9	32.3
Median Age	36.6	25.1	25.3	27.9
License Type				
Percent Operator	90.5 (295)	70.9 (256)	67.0 (193)	58.3 (74)
Percent Chauffeur	7.7 (25)	24.7 (89)	26.0 (75)	23.6 (30)
Percent Public Passenger Chauffeur	1.8 (6)	4.4 (16)	7.0 (20)	18.1 (23)
Percent of Drivers With One Or More Violation Citations in 1967	4.9 (16)	42.1 (152)	41.0 (118)	45.7 (58)
Mean Number of Violation Citations Per Driver in 1967	0.055 (18)	0.620 (224)	0.670 (193)	0.653 (83)
Percent of Drivers With One or More Serious** Violation Citations in 1967	1.2 (4)	12.5 (45)	13.5 (39)	11.8 (15)
Mean Number of Serious Violation Citations Per Driver in 1967	0.012 (4)	0.161 (58)	0.170 (49)	0.142 (18)
Percent of Drivers With One or More License Suspension in 1967	0.3 (1)	3.0 (11)	2.4 (7)	3.1 (4)
Mean Number of License Suspensions Per Driver in 1967	0.003 (1)	0.050 (18)	0.038 (11)	0.032 (4)

Table 3. (Continued)

	Control Group 326 Drivers	5 Accident Group* 361 Drivers	6-7 Accident Group* 288 Drivers	≥ 8 Accident Group* 127 Drivers
Percent of Drivers With One or More Suspensions for Driving While Intoxicated in 1967	0.3 (1)	1.7 (6)	1.0 (3)	2.4 (3)
Mean Number of Suspensions For Driving While Intoxicated in 1967	0.003 (1)	0.022 (8)	0.010 (3)	0.024 (3)
Percent of Drivers With One or More Suspensions For Failing to Appear in 1967	0 (0)	0.6 (2)	0.7 (2)	0.8 (1)
Mean Number of Suspensions For Failing to Appear in 1967	0 (0)	0.006 (2)	0.007 (2)	0.008 (1)
Percent of Drivers With One or More Suspensions for Leaving the Scene of an Accident in 1967	0 (0)	1.1 (4)	0.7 (2)	0 (0)
Mean Number of Suspensions for Leaving the Scene of an Accident in 1967	0 (0)	0.014 (5)	0.010 (3)	0 (0)
Mean Number of Accidents in 1967	0.080 (26)	3.216 (1161)	3.403 (980)	3.850 (489)
Mean Number of Accidents During Entire Study Period 1967-1971	0.454 (148)	5.000 (1805)	6.323 (1821)	9.578 (1219)

* Total accidents during the five year study period.

** Serious violation refers to a violation with a point count of five or more or a violation that requires mandatory license suspension.

Table 4. Number of Accidents in 1967 in Relation to Number of Accidents in the Following Four Year Period 1968-1971.

Number of Additional Accidents During Following Four Year Period 1968-1971	Number of Accidents Per Driver in 1967														
	3			4			5			6			≥ 7		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	728	41.3	100.0	79	32.8	100.0	8	17.4	100.0	0	0		0	0	
1	481	27.3	58.7	62	25.7	67.2	10	21.7	82.6	1	10.0	100.0	0	0	
2	291	16.5	31.4	45	18.7	41.5	12	26.1	60.9	4	40.0	90.0	1	25.0	100.0
3	140	7.9	14.9	24	10.0	22.8	7	15.2	34.8	0	0	50.0	2	50.0	75.0
4	56	3.2	7.0	16	6.6	12.8	4	8.7	19.6	2	20.0	50.0	0	0	25.0
5	23	1.3	3.8	5	2.1	6.2	2	4.4	10.9	1	10.0	30.0	0	0	25.0
≥ 6	44	2.5	2.5	10	4.1	4.1	3	6.5	6.5	2	20.0	20.0	1	25.0	25.0
	1763	100.0		241	100.0		46	100.0		10	100.0		4	100.0	

Of that same group, 58.7 percent had one or more additional accidents and 31.4 percent had two or more additional accidents during the same four year period.

Of that group of 241 drivers who had four accidents in 1967, 32.8 percent had no additional accidents during the following four year period. Of that same group, 67.2 percent had one or more additional accidents and 41.5 percent had two or more additional accidents during the following four year period.

Of that group of forty-six drivers who had five accidents during the year 1967, only eight drivers, or 17.4 percent of the group remained accident free during the following four year period. Of that same group, 82.6 percent had one or more additional accidents, 60.9 percent had two or more additional accidents, and 34.8 percent had three or more additional accidents, all during the same four year period.

Of the ten drivers who were found that had six accidents during the year 1967, all had at least one accident during the following four year period. Nine drivers or 90.0 percent of the group had two or more accidents during the same four year period. Half of the drivers in this group had four or more accidents during this same four year period.

Only four drivers were found that had seven or more accidents during the year 1967. All four of these drivers

had two or more accidents during the following four year period.

It is clear that the greater number of accidents that a driver has during a particular year increases the probability that he will have additional accidents during the following years.

Seriousness of the Accidents

State Police records classify accidents into three categories based on the type of accident. These categories are property damage only for accidents in which fifty dollars or more damage results and no one is killed or injured; injury accidents in which someone sustains a personal injury; and fatality accidents in which a death results.

Using these three categories as a criterion on which to base the seriousness of an accident, the data indicates that, in general, the more accidents that a driver has, the less serious the accidents are. As shown in Figure 1 and Table 5, about twenty-seven percent of the reported accidents in which the three-accident driver group were involved were either injury or fatality accidents. In comparison, less than ten percent of the reported accidents in which the eight or more accident group were involved were injury or fatality accidents.

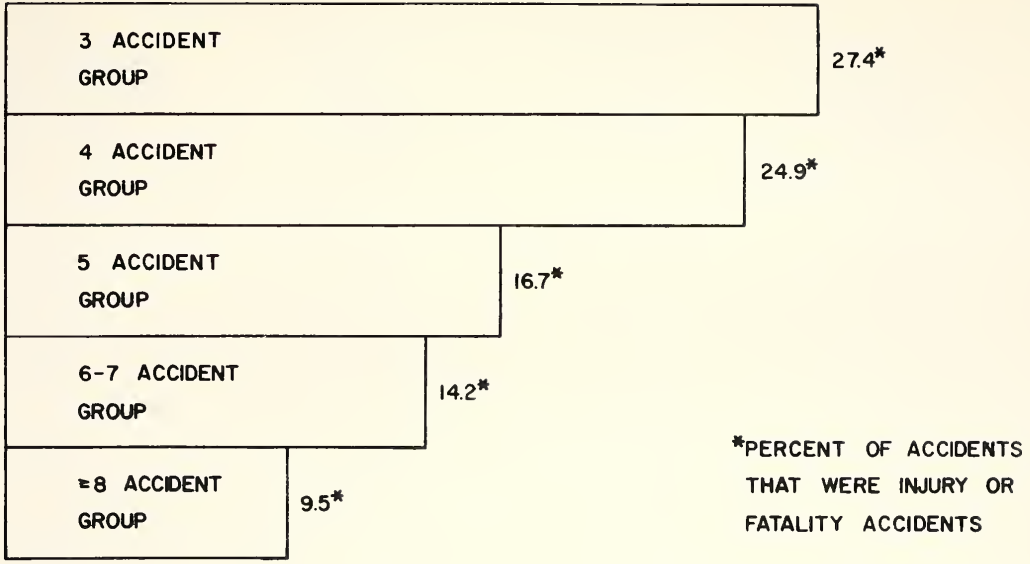

FIGURE 1 SERIOUSNESS OF ACCIDENTS IN RELATION TO TOTAL ACCIDENT INVOLVEMENT

Table 5. Type of Accident.

Total Accidents Per Driver During Five Year Study Period 1967-1971	Percent of Accidents That Were Property Damage Only	Percent of Accidents That Were Injury Accidents	Percent of Accidents That Were Fatal Accidents	Percent of Accidents That Were Injury or Fatal Accidents
3 Accident Group (2184)*	72.62 (1586)	26.51 (579)	0.87 (19)	27.38 (598)
4 Accident Group (2240)	75.09 (1682)	24.69 (553)	0.22 (5)	24.91 (558)
5 Accident Group (1805)	83.27 (1503)	16.68 (301)	0.05 (1)	16.73 (302)
6-7 Accident Group (1821)	85.78 (1562)	14.00 (255)	0.22 (4)	14.22 (259)
$\geq$ 8 Accident Group (1219)	90.48 (1103)	9.19 (112)	0.33 (4)	9.52 (116)

* Numbers in parentheses refer to number of accidents.

Where the Accidents Occurred

A definite relationship was found between the number of accidents that a driver had and his residence and the location of the accidents. As shown in Tables 6 and 7 and Figure 2, about thirteen percent of the drivers in the control group were found to reside in Indianapolis while more than twenty-nine percent of the drivers in the eight or more accident group resided in Indianapolis. About fourteen percent of the accidents incurred by the drivers of the control group took place in Indianapolis. More than thirty-two percent of the accidents of the eight or more accident driver group occurred in Indianapolis.

Similar results were found for the city of Fort Wayne. As shown in Figure 3 and Tables 6 and 7, about seven percent of the drivers and about seven percent of the accidents of the control driver group occurred in Fort Wayne. Of the group of drivers who had eight or more accidents during the five year study period, fifteen percent of the drivers were residents of Fort Wayne and more than fourteen percent of the accidents in which this group of drivers were involved occurred in Fort Wayne.

Over forty-six percent, or nearly half of all accidents in which the drivers of the group who had eight or more accidents were involved occurred either in Fort Wayne or Indianapolis.

These findings seem to suggest that the high accident driver, one involved in multiple accidents in a given year,

Table 6. Accident Involvement in Five Indiana Cities.

City	Percent of Accidents in Each Group					
	Control Group 326 Drivers 148 Accidents	3 Accident Group 728 Drivers 2184 Accidents	4 Accident Group 560 Drivers 2240 Accidents	5 Accident Group 361 Drivers 1805 Accidents	6-7 Accident Group 288 Drivers 1821 Accidents	> 8 Accident Group 127 Drivers 1219 Accidents
Indianapolis	14.2 (21)	15.0 (328)	15.8 (354)	20.3 (367)	19.5 (356)	32.2 (392)
Fort Wayne	7.4 (11)	8.8 (192)	9.5 (212)	10.6 (191)	14.3 (261)	14.0 (171)
Gary	8.1 (12)	3.7 (81)	5.1 (115)	6.0 (109)	5.6 (102)	8.0 (97)
South Bend	4.1 (6)	3.9 (85)	4.3 (96)	3.7 (66)	7.0 (128)	1.5 (18)
Kokomo	4.7 (7)	1.2 (26)	0.9 (21)	1.6 (29)	1.8 (32)	2.7 (33)
	38.5	32.6	35.6	42.2	48.2	58.4

Table 7. Residence of Drivers for Five Indiana Cities.

City	Percent of Accidents in Each Group					
	Control Group 326 Drivers	3 Accident Group 728 Drivers	4 Accident Group 560 Drivers	5 Accident Group 361 Drivers	6-7 Accident Group 288 Drivers	> 8 Accident Group 127 Drivers
Indianapolis	13.2 (43)	15.2 (111)	19.3 (108)	21.9 (79)	22.6 (65)	29.1 (37)
Fort Wayne	7.1 (23)	10.3 (75)	9.8 (55)	10.2 (37)	14.9 (43)	15.0 (19)
Gary	6.7 (22)	5.1 (37)	6.1 (34)	6.4 (23)	6.3 (18)	7.9 (10)
South Bend	1.5 (5)	4.7 (34)	5.4 (30)	4.2 (15)	7.3 (21)	2.4 (3)
Kokomo	1.5 (5)	2.2 (16)	1.1 (6)	1.7 (6)	2.1 (6)	3.9 (5)
	30.0	37.5	41.7	44.4	53.2	58.3

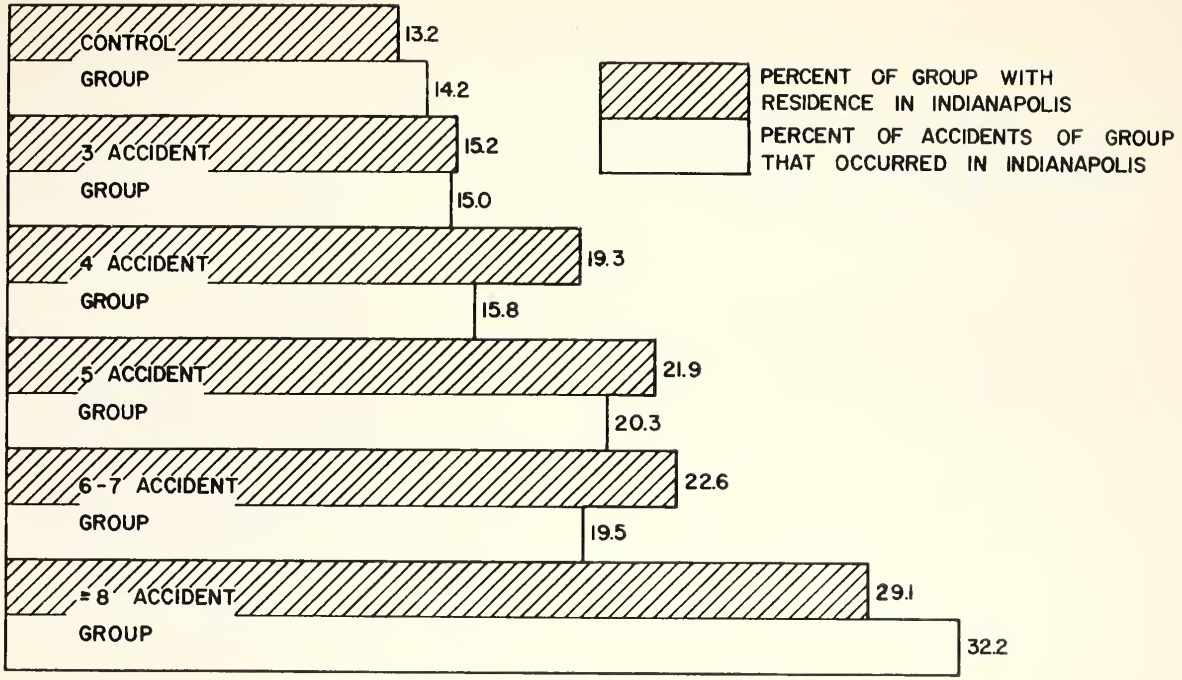

FIGURE 2 RESIDENCE AND ACCIDENT OCCURRENCE IN INDIANAPOLIS IN RELATION TO TOTAL ACCIDENT INVOLVEMENT

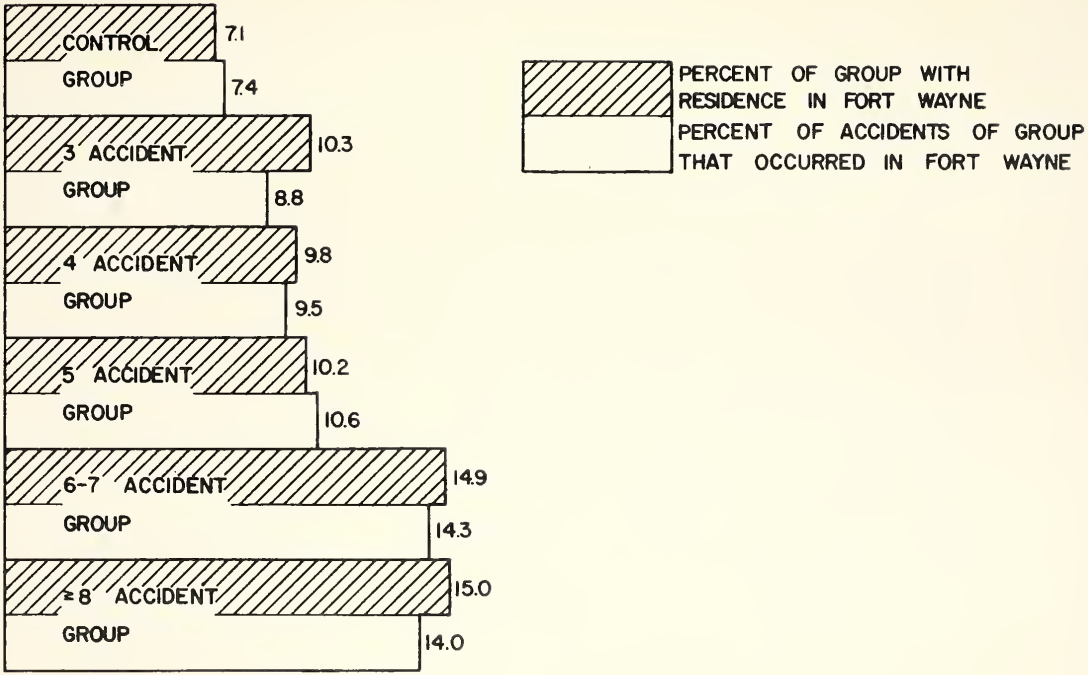

FIGURE 3 RESIDENCE AND ACCIDENT OCCURRENCE IN FORT WAYNE IN RELATION TO TOTAL ACCIDENT INVOLVEMENT

is most likely to be a resident of a large urbanized, more densely populated area. This seems reasonable since there are more vehicles and pedestrians in these areas, more congestion, and thus many more conflicts and opportunities for accidents to occur.

Driver Characteristics

Several personal characteristics of the drivers were available from the driver and accident records. These characteristics include age, sex, weight and height of the driver, and license restrictions. It would have been informative to have additional information on the drivers such as occupation, economic status and education, but limitations of the data prevented this. Much might also have been learned about driver attitudes if it would have been possible to interview some of the drivers. This, however was not possible due to the confidential nature of the accident records.

Age

The high accident driver is, in general, younger than the average driver. The control driver was found to have a mean age of 38.65 years and a median age of 36.6 years as shown in Table 8. The mean age of the high accident driver ranged from 29.59 years for the five accident group to 32.46 years for the three accident group. The median age for the high accident driver ranged from 25.1 years for the five accident group to 27.9 years for the eight or more accident group.

Table 8. Age Distribution.

Age Groups-Years	Percent of Drivers in Age Groups					
	Control Group	3 Accident Group	4 Accident Group	5 Accident Group	6-7 Accident Group	≥ 8 Accident Group
15	1.5	0	0.2	0.8	0.4	0
	(5)	(0)	(1)	(3)	(1)	(0)
16	3.1	3.8	4.8	6.4	5.2	3.9
	(10)	(28)	(27)	(23)	(15)	(5)
17	2.8	7.0	7.0	6.1	8.3	6.3
	(9)	(51)	(39)	(22)	(24)	(8)
18-19	6.1	14.7	13.8	15.5	14.9	11.8
	(20)	(107)	(77)	(56)	(43)	(15)
20-24	11.0	18.0	17.3	19.9	20.1	19.7
	(36)	(131)	(97)	(72)	(58)	(25)
25-34	23.3	19.5	20.0	20.8	20.1	22.8
	(76)	(142)	(112)	(75)	(58)	(29)
35-44	13.2	14.8	14.6	15.8	15.7	12.6
	(43)	(108)	(82)	(57)	(45)	(16)
45-54	19.0	11.7	10.2	8.9	8.3	11.8
	(62)	(85)	(57)	(32)	(24)	(15)
55-64	12.6	6.1	8.0	3.6	4.5	7.9
	(41)	(44)	(45)	(13)	(13)	(10)
65-74	6.1	2.6	2.7	1.4	2.1	3.2
	(20)	(19)	(15)	(5)	(6)	(4)
≥ 75	1.3	1.8	1.4	0.8	0.4	0
	(4)	(13)	(8)	(3)	(1)	(0)
	100.0	100.0	100.0	100.0	100.0	100.0
	(326)	(728)	(560)	(361)	(288)	(127)

Table 8. (Continued)

Age Groups-Years	Percent of Drivers in Age Groups					
	Control Group	3 Accident Group	4 Accident Group	5 Accident Group	6-7 Accident Group	> 8 Accident Group
Mean Age	38.65	32.46	32.38	29.58	29.91	32.29
Median Age	36.6	27.5	26.8	25.1	25.3	27.9

Many studies have noted that certain age groups, most notably the younger drivers, have a higher probability of being involved in accidents (8,10,11,12,19,20). The data from this study agrees with this finding. However, in most cases, this study indicates that age has little value as a predictor of which drivers who are high accident drivers during a particular year will continue to have accidents during the following years.

The 728 drivers who had three accidents in 1967 and no additional accidents during the following four year period had a mean age of 32.46 years and a median age of 27.5 years as indicated in Table 8. In contrast, the 127 drivers who had eight or more accidents during the five year study period had a mean age of 32.29 years and a median age of 27.9 years. There is less than half a years difference between either the means or medians of the ages of these two driving groups. Clearly the age of the driver who had already had three or more accidents during a particular year will, in most cases, be of little use in predicting whether he will have additional accidents during following years.

The remaining driver characteristics studied are for drivers who had a total of five or more accidents during the five year study period with at least three of these accidents occurring during the year 1967.

Sex

While it is well established that male drivers have a greater accident involvement than females, the results of this study are striking. As indicated in Table 3, less than sixty percent of the licensed drivers in Indiana are male; however, male drivers account for over ninety-four percent of the drivers with three or more accidents during the year 1967 and a total of five or more accidents during the entire five year study period. Of the 776 drivers in this group of drivers, only thirty-four were female.

Other Driver Characteristics

The results of this study found little difference between the control driver group and any of the high accident groups for the variables: index of weight/height or license restrictions. Findings for this phase of the analysis will be found in Appendix D.

License Type

It is unfortunate that no information was available concerning the exposure rate of the drivers under study. The number of miles that a person drives and the circumstances under which they are driven should undoubtedly be an important consideration in this type of an accident study. It is probable that a person who holds a chauffeur or public passenger chauffeur's license is driving more than the average person with just an operator's license. However, it

is also probable that the high accident drivers in this study are not average drivers. It is certainly possible that many of these high accident drivers also travelled many more miles in 1967 and the years following than the average driver with an operator's license.

The summary statistics of this study, as shown in Table 3, indicate that as the number of accidents in which a driver is involved goes up, the probability that he is a holder of either a chauffeur or public passenger chauffeur's license also goes up.

While only 7.7 percent of the control group were drivers with chauffeur's licenses, 23.6 percent of the drivers with eight or more accidents during the five year study period were drivers with chauffeur's licenses. The accident involvement of drivers holding the public passenger chauffeur's license is even more stunning. While they consitute only 1.8 percent of the control group, 18.1 percent of the drivers in the eight or more accident group were public passenger chauffeur's license holders.

This evidence that a high percentage of the drivers who had a high number of accidents during the five year study period hold chauffeur's or public passenger chauffeur's licenses probably provides some explanation of some of the other characteristics of this group. The finding that a high number of the drivers of this group resided in large urban areas and had accidents there is undoubtedly highly correlated with the license type. Similarly the finding that as the

number of accidents increased the seriousness of the accidents decreased probably results from the fact that many of these accidents are in urban areas where speeds are low and congestion great and that those possessing chauffeur's or public passenger chauffeur's licenses are likely driving during these congested conditions.

The question now arises, is it realistic to expect that a person who makes his living by driving will be involved in more accidents because he travels more miles and thus has a greater number of opportunities to become involved in an accident? Or should we expect the person who makes his living by driving to be such a better driver that he will be involved in fewer accidents? Unfortunately, an answer to these questions is not yet available.

The Driving Record

The 1967 driving record of drivers with three or more accidents during the year 1967 and a total of five or more accidents during the entire five year study period appears to be of little use in predicting those drivers that will continue to have accidents. Drivers who had no violation citations in 1967 constituted 54.3 percent of the drivers who had eight or more accidents during the five year study period and 57.9 percent of the drivers who had five accidents during the same period (See Table 9). Those drivers who had two or more violation citations during the year 1967 constituted 13.9 percent of the drivers who had five total

Table 9. 1967 Violation Citations.

Number of Citations in 1967	Control Group			5 Accidents*			6-7 Accidents*			≥ 8 Accidents*		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	310	95.1	100.0	209	57.9	100.0	170	59.0	100.0	69	54.3	100.0
1	14	4.3	4.9	102	28.2	42.1	71	24.7	41.0	40	31.5	45.7
2	2	0.6	0.6	35	9.7	13.9	28	9.7	16.3	13	10.2	14.2
3	0	-	-	12	3.3	4.2	12	4.2	6.6	3	2.4	4.0
4	0	-	-	1	0.3	0.9	5	1.7	2.4	2	1.6	1.6
5	0	-	-	1	0.3	0.6	2	0.7	0.7	0	-	-
6	0	-	-	0	-	0.3	0	-	-	0	-	-
7	0	-	-	1	0.3	0.3	0	-	-	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

* Total accidents during the five year study period.

accidents and 14.2 percent of the drivers who had eight or more total accidents. The percentage of drivers having various numbers of citations from each of the high accident groups is roughly the same, thus making violation citations of little use as a predictor to determine whether a driver who has a number of accidents during a particular year will continue to have accidents during the following years.

As can be seen in Table 10, the same situation seems to be true of serious violations. The fact that a driver had one or more serious violations during the year 1967 did not have any significant relationship to the number of accidents in which the driver was involved during the following years.

Tables 11 and 12 report the relationship of 1967 license suspensions (Table 11) and 1967 license suspensions for driving while intoxicated (Table 12) with 1967 and future accident record. The numbers of such suspensions are so small as to make findings impossible.

While in many cases the violation record of a driver may be highly correlated to his accident record (2,3,5,10, 12,15), it appears to be of little use for predicting whether drivers who are high accident drivers during one period will continue to be high accident drivers in the following period.

The Combined Characteristics as Accident Predictors

As it has already been noted, the variables so far examined in this study do not clearly indicate which drivers with high accident records during a particular year will

Table 10. 1967 Serious Violations*

Number of Serious Violations in 1967	Control Group			5 Accidents Group			6-7 Accidents Group			≥ 8 Accidents Group		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	322	98.8	100.0	316	87.5	100.0	249	86.5	100.0	112	88.2	100.0
1	4	1.2	1.2	38	10.5	12.5	33	11.5	13.5	13	10.2	11.8
2	0	-	-	5	1.4	2.0	3	1.0	2.0	1	0.8	1.6
3	0	-	-	1	0.3	0.6	2	0.7	1.0	1	0.8	0.8
≥ 4	0	-	-	1	0.3	0.3	1	0.3	0.3	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

* Serious violation refers to a violation with a point count of five or more or a violation that requires mandatory license suspension.

Table 11. 1967 License Suspensions.

Number of License Suspensions in 1967	Control Group			5 Accident Group			6-7 Accident Group			≥ 8 Accident Group		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	325	99.7	100.0	350	96.9	100.0	281	97.6	100.0	123	96.8	100.0
1	1	0.3	0.3	7	1.9	3.1	5	1.7	2.4	4	3.2	3.2
2	0	-	-	2	0.6	1.2	1	0.35	0.7	0	-	-
3	0	-	-	1	0.3	0.6	0	-	0.35	0	-	-
4	0	-	-	1	0.3	0.3	1	0.35	0.35	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

Table 12. 1967 Suspensions for Driving While Intoxicated.

Number of Suspensions for Driving While Intoxicated in 1967	Control Group			5 Accident Group			6-7 Accident Group			≥ 8 Accident Group		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	325	99.7	100.0	355	98.3	100.0	285	99.0	100.0	124	97.6	100.0
1	1	0.3	0.3	5	1.4	1.7	3	1.0	1.0	3	2.4	2.4
2	0	-	-	0	-	0.3	0	-	-	0	-	-
3	0	-	-	1	0.3	0.3	0	-	-	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

continue to have a high accident rate. In order to evaluate the effects of all the variables combined, a technique called Automatic Interaction Detector, or AID, was utilized. This program, supplied by the Purdue University Computer Center, uses a least squared technique to determine that dichotomy based on any predictor that has the largest correlation with the dependent variable. Having made the initial split the program continues the splitting process in a stepwise manner using predictors in order of their relative importance (17).

The 776 drivers who had five or more accidents during the five year study period were tested using this program in an attempt to determine characteristics known in 1967 that would allow prediction of their future accident involvement. The dependent variable used was the total accidents during the years 1968 through 1971. If a driver had two reported accidents or less during this four year period, he was coded with a "zero". If the driver was involved in three or more accidents he was coded with a "one". Therefore, a subgroup with a mean of zero would indicate that all the drivers in that group had two accidents or less during the four year period following the year 1967. A mean of 1.0 would indicate that all drivers in that subgroup had three or more accidents during the same period. A mean of 0.4 would indicate that 40 percent of the drivers in that subgroup had three or more accidents. Of the

original group of 776 drivers, 342 drivers or 44.1 percent of the group were drivers who had three or more accidents during the period following the year 1967.

The following driver characteristics were used as predictors in the AID program:

1. Sex,
2. Age,
3. License type,
4. License suspensions in 1967,
5. Driving while intoxicated suspensions in 1967,
6. Serious violations in 1967,
7. Total accidents in 1967, and
8. Total violations in 1967.

The results of the program are shown in Figure 4. As can be seen, there are only four subgroups in which more than sixty-five percent of the drivers were ones who had three or more accidents during the four year period following 1967.

Looking at Subgroup 3, forty drivers out of fifty-nine or 67.8 percent of the 1967 high accident drivers who held public passenger chauffeur's licenses had three or more accidents during the four year period following the year 1967. As shown in Subgroup 25, twenty-six out of thirty-four drivers or 76.5 percent of the drivers in this public passenger chauffeur group who were between the ages of 15 to 24 or 45 or older, had three or more accidents during the four year period following the year 1967.

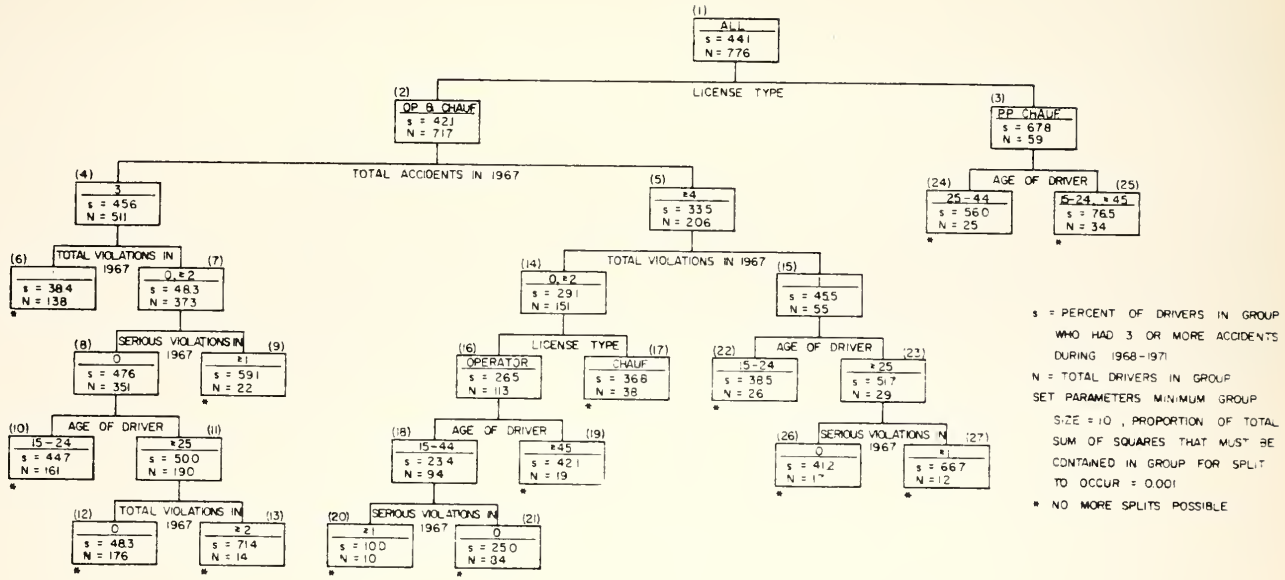

FIGURE 4 RESULTS OF AUTOMATIC INTERACTION DETECTOR PROGRAM

Subgroup 13 were drivers who had three accidents in 1967, had an operator's or chauffeur's license, were twenty-five years of age or older, and had two or more violations during the year 1967, none of which were defined as serious violations. Ten of the fourteen drivers, or 71.4 percent of this group, had three or more accidents during the four year period following the year 1967.

Subgroup 27 included those drivers who were twenty-five years old or older, held an operator's or chauffeur's license and were involved in four or more accidents during the year 1967. These drivers also had one violation citation during the year 1967 which was defined as a serious violation. Eight of the twelve drivers in this group, or 66.7 percent, had three or more accidents during the following four year period.

It is clear that using only the characteristics available from the driver and accident records, it is extremely difficult to predict with much accuracy which drivers that have a high number of accidents during a particular year will continue to have a high number of accidents during following years.

CONSEQUENCES OF LICENSE SUSPENSION OR REVOCATION

One of the purposes of this study was to evaluate controls that would best prevent drivers who have a number of accidents during one year from having additional accidents during future years. The only method that will absolutely assure that a driver does not have accidents is to prevent him from driving. In todays society where personal automobile transportation is a necessity in many areas, this form of restriction may have devastating effects on the mobility and economic status of a family or individual. The importance of the driving privilege might be noted by the fact that a large number of drivers in this study who had license suspensions also had citations for driving while their license was suspended.

If a persons driving privileges are to be suspended, perhaps there should be a reasonable indication that he has a high probability of becoming involved in further accidents.

Drivers Having Three Accidents During the Year 1967

If all of the 1763 drivers in this study who had three accidents during the year 1967 were prevented from driving during the following four year period, they as a group would not have become involved in the 2102 additional accidents that they had during this period as shown in Table 13.

However, 728 drivers or 41.3 percent (See Table 13) of the group had no additional reported accidents during the following four year period and denying them the right to drive would have provided no recognizable benefits to society. An additional 481 drivers or 27.3 percent of the group had only one additional accident during the following four year period. It was determined that the mean number of accidents per driver over the five year period for the control group was 0.45, as shown in Table 3. This means that the average accident rate of the Indiana control group is about one accident per driver every eleven years. Perhaps one accident during a four year period is not too bad of a record. Even two accidents in four years might not be considered too unusual. Therefore, by denying licenses to all drivers who had a total of three accidents during the year 1967, 728 individuals who had no additional accidents plus 481 who had only one additional accident during the following four year period would have suffered in order to prevent 554 persons from this group from having 1621 accidents.

If only those drivers who had three or more additional accidents during the following four year period were considered, then 1500 persons who had two accidents or less during this period would have lost their license in order to prevent 263 drivers from having 1039 accidents.

Table 13. Additional Accidents During 1968-1971 by Drivers with Three Accidents During 1967.

Number of Additional Accidents During the Following Four Year Period 1968-1971	Drivers With Three Accidents During The Year 1967					
	Number of Drivers	Total Accidents During Four Year Period 1968-1971	Percent of Drivers	Percent of Total Accidents During Four Year Period 1968-1971	Cumulative Number of Drivers	Cumulative No. of Total Accidents During The Years 1968-1971
0	728	0	41.3	0	1763	2102
1	481	481	27.3	22.9	1035	2102
2	291	582	16.5	27.7	554	1621
3	140	420	7.9	20.0	263	1039
4	56	224	3.2	10.6	123	619
5	23	115	1.3	5.5	67	395
$\geq$ 6	44	280	2.5	13.3	44	280
	1763	2102	100.0	100.0		

Drivers Having Four Accidents During The Year 1967

If the 241 drivers who had four accidents during the year 1967 had been prevented from driving during the following four year period, 393 accidents would have been prevented as indicated in Table 14. Seventy-nine drivers or 32.8 percent of this group had no additional accidents during this four year period and sixty-two drivers or 25.7 percent had only one additional accident. Thus by denying driving privileges to the entire group of drivers who had four reported accidents during the year 1967, 141 or 58.5 percent of the group who had either no further additional accident involvement or only one additional accident during the following four year period would also have lost their driving privileges. Only 100 drivers, or 41.5 percent of the group, had more than two accidents in the following four year period. These 100 drivers, however, had 331 accidents, 84.2 percent of the total for this group.

If only the drivers who had three or more additional accidents during the following four year period were considered, 186 drivers or 77.2 percent of the drivers who had two accidents or less during this period would have lost their licenses in order to remove from the highways 55 drivers, 22.8 percent of the group, who had 241 accidents, 61.3 percent of the accidents.

Table 14. Additional Accidents During 1968-1971 by Drivers with Four Accidents During 1967.

Number of Additional Accidents During the Following Four Year Period 1968-1971	Drivers With Four Accidents During The Year 1967					
	Number of Drivers	Total Accidents During Four Year Period 1968-1971	Percent of Drivers	Percent of Total Accidents During Four Year Period 1968-1971	Cumulative Number of Drivers	Cumulative No. of Total Accidents During The Years 1968-1971
0	79	0	32.8	0	241	393
1	62	62	25.7	15.8	162	393
2	45	90	18.7	22.9	100	331
3	24	72	10.0	18.3	55	241
4	16	64	6.6	16.3	31	169
5	5	25	2.1	6.4	15	105
$\geq$ 6	10	80	4.1	20.3	10	80
	241	393	100.0	100.0		

Drivers Having Five Accidents During the Year 1967

If all of the forty-six drivers who were involved in five accidents during the year 1967 were prevented from driving during the following four year period, 116 accidents would have been prevented as indicated in Table 15. During this same period, eight drivers or 17.4 percent of the group had no additional accidents and ten drivers or 21.7 percent of the group had only one additional accident. Thus by denying driving privileges to the entire group of drivers who had five accidents during the year 1967, 18 drivers or 39.1 percent of the group who had either an accident free record or only one additional accident during the following four years would be denied the privilege of driving. On the other hand, 28 drivers, 60.9 percent of this group, who had 106 accidents would have been taken off the road.

If only those drivers who had three or more accidents during the four year period following the year 1967 were considered, 30 drivers or 65.2 percent of the group who had two accidents or less during this same period would be suspended in order to prevent the 16 drivers, 34.8 percent of the group, that accounted for 82 accidents from driving.

Drivers Having Six or More Accidents During the Year 1967

If all of the fourteen drivers who had six or more accidents during the year 1967 were prevented from driving during the following four year period, seventy accidents would have been prevented as indicated in Table 1. All of

Table 15. Additional Accidents During 1968-1971 by Drivers with Five Accidents During 1967.

Number of Additional Accidents During the Following Four Year Period 1968-1971	Drivers With Five Accidents During The Year 1967					
	Number of Drivers	Total Accidents During Four Year Period 1968-1971	Percent of Drivers	Percent of Total Accidents During Four Year Period 1968-1971	Cumulative Number of Drivers	Cumulative No. of Total Accidents During The Years 1968-1971
0	8	0	17.4	0	46	116
1	10	10	21.7	8.6	38	116
2	12	24	26.1	20.7	28	106
3	7	21	15.2	18.1	16	82
4	4	16	8.7	13.8	9	61
5	2	10	4.4	8.6	5	45
$\geq$ 6	3	35	6.5	30.2	3	35
	46	116	100.0	100.0		

the drivers in this group except one had at least two or more accidents during the following four year period. The one exception had a single accident during the same period. Eight of the drivers or 57.1 percent of the group had three or more accidents during the four year period. The group as a whole had an average of 1.25 accidents per driver per year during the four year period following the year 1967.

CASE HISTORIES OF SELECTED HIGH ACCIDENT DRIVERS

In order to paint a more vivid picture of the characteristics of the high accident driver, case histories of several selected drivers are presented here. Entries on their driving records and accident records have been combined and chronologically ordered so that the sequence of events in their driving history over the five year study period may be noted.

Clear Driving Record

The first three individuals presented are drivers with clear driving records; that is, with no citations for violations.

DRIVER: 2174
RESIDENCE: Crown Point
LICENSE: Chauffeur
AGE: 38
SEX: Male
RESTRICTIONS: Glasses or contact lenses, outside review mirror

DATE	ACTION	VIOLATION POINTS
1/31/67	Property damage accident	
2/18/67	Injury Accident	
6/05/67	Property damage accident	

4/24/68	Property damage accident
1/31/69	Injury accident
9/24/70	Chauffeur license issued
11/23/70	Property damage accident
1/12/71	Property damage accident
3/12/71	Property damage accident
6/ 7/71	Property damage accident
10/15/71	Chauffeur license issued
2/10/72	Current status-clear

Five year summary:	Total accidents	9
	Total violations	0
	Total violation points	0
	Total suspensions	0

DRIVER: 3077
RESIDENCE: Indianapolis
LICENSE: Operator
AGE: 41
SEX: Male
RESTRICTIONS: None

DATE	ACTION	VIOLATION POINTS
3/10/67	Property damage accident	
5/30/67	Injury accident	
7/29/67	Property damage accident	
8/14/67	Property damage accident	
3/02/68	Property damage accident	
4/17/68	Operator license issued	
1/17/69	Property damage accident	
3/03/69	Injury accident	
5/21/70	Operator license issued	
7/31/70	Injury accident	
2/10/72	Current status-clear	

Five year summary:	Total accidents	8
	Total violations	0
	Total violation points	0
	Total suspensions	0

DRIVER: 1996
RESIDENCE: Indianapolis
LICENSE: Operator
AGE: 24
SEX: Male
RESTRICTIONS: None

DATE	ACTION	VIOLATION POINTS
10/08/67	Property damage accident	
12/23/67	Injury accident	
12/25/67	Property damage accident	
5/03/68	Operator license issued	
2/19/69	Property damage accident	
5/07/70	Operator license issued	
11/19/71	Property damage accident	
4/20/72	Current status-clear	

Five year summary:	Total accidents	5
	Total violations	0
	Total violation points	0
	Total suspensions	0

Drivers with Improved Accident Records After 1967

Two individuals are presented next who displayed a much improved accident record during the four year period following the year 1967. The first driver had five reported accidents during the year 1967 and none during the following four year period. The second driver had six accidents

during the year 1967 and only one additional accident during the first quarter of the year 1968. No further accidents were noted.

DRIVER: 1269
RESIDENCE: Kokomo
LICENSE: Operator
AGE: 49
SEX: Female
RESTRICTIONS: Glasses or contact lenses, outside rearview mirror

This driver had two previous violation citations during the year 1964.

DATE	ACTION	VIOLATION POINTS
1/23/67	Property damage accident	
2/03/67	Sign violation	4
3/02/67	Property damage accident	
5/29/67	Injury accident	
5/30/67	Injury accident	
6/16/67	Injury accident	
8/09/68	Operator license issued	
8/12/70	Operator license issued	
2/15/72	Current status-clear	

Five year summary:		
	Total accidents	5
	Total violations	1
	Total violation points	4
	Total suspensions	0

DRIVER: 2625
RESIDENCE: Elkhart
LICENSE: Chauffeur
AGE: 49

SEX: Male
RESTRICTIONS: Glasses or contact lenses

This driver had a record of three violation citations totaling twelve points during the years 1963 through 1966.

DATE	ACTION	VIOLATION POINTS
2/15/67	Property damage accident	
5/26/67	Property damage accident	
7/03/67	Injury accident	
7/25/67	License suspended-responsible for accident (5/26/67)	
10/14/67	Property damage accident	
10/16/67	Speeding violation-60 mph in 55 mph zone	2
11/22/67	Suspension closed	
12/13/67	Property damage accident	
12/19/67	Property damage accident	
12/20/67	Signal violation	4
3/04/68	Property damage accident	
5/20/68	On probation	
11/20/68	Probation closed	
5/15/70	Chauffeur license issued	
5/25/70	Speeding violation-50 mph in 40 mph zone	2
3/31/71	Chauffeur license issued	
2/10/72	Current status-clear	

Five year summary:		
	Total accidents	7
	Total violations	3
	Total violation points	8
	Total suspensions	1

Three Accidents in 1967 and Continued High Accident Rate Afterward

The next three drivers presented all had only three reported accidents during the year 1967. They all continued, however, to have three or more additional accidents during the four year period following the year 1967.

DRIVER: 1376
RESIDENCE: Indianapolis
LICENSE Public passenger chauffeur
AGE: 43
SEX: Male
RESTRICTIONS: Glasses or contact lenses, automatic transmission

During the years 1962 through 1966, this driver accumulated fifteen violation citations with a total point value of 50 points. He was placed on probation in 1963 and again in 1964, 1965 and 1966.

DATE	ACTION	VIOLATION POINTS
4/29/67	Speeding violation-85 mph in 70 mph zone	2
8/08/67	On probation (1)	
9/15/67	Injury accident	
10/16/67	Property damage accident	
11/11/67	Property damage accident	
1/25/68	Turning violation	2
2/08/68	Probation (1) closed	
12/13/68	Speeding violation-67 mph in 50 mph zone	3
2/28/69	Signal violation	4
6/11/69	Property damage accident	
1/16/70	Turning violation	2

1/17/70	Signal violation-local ordinance	2
1/22/70	Signal violation-local ordinance	2
1/22/70	Signal violation-local ordinance	2
7/13/70	On probation (2)	
7/28/70	Property damage accident	
9/18/70	Public passenger chauffeur license issued	
1/13/71	Probation (2) closed	
2/03/71	Property damage accident	
2/23/71	Turning violation	2
9/20/71	Speeding violation-42 mph in 30 mph zone	2
9/28/71	Public passenger chauffeur license issued	
(1/10/72	Signal violation-local ordinance	2)
(2/03/72	Turning violation	2)
2/15/72	Current status- 8 active violation points	

Five year summary:	Total accidents	6
	Total violations	10
	Total violation points	23
	Total suspensions	0

DRIVER: 2753
RESIDENCE: Valparaiso
LICENSE: Operator
AGE: 22
SEX: Male
RESTRICTIONS: None

This driver had two speeding violation citations during the year 1966.

DATE	ACTION	VIOLATION POINTS
3/13/67	Property damage accident	
9/28/67	Property damage accident	

11/04/67	Signal violation	4
12/05/67	Injury accident	
2/28/68	Injury accident	
6/18/68	Operator license issued	
10/12/68	Speeding violation-60 mph in 45 mph zone	2
12/06/68	Speeding violation-57 mph in 45 mph zone	2
2/05/69	Property damage accident	
2/10/69	Speeding violation-50 mph in 30 mph zone	3
3/05/69	Property damage accident	
5/01/69	Property damage accident	
6/08/69	Injury accident	
8/16/69	Injury accident	
9/04/69	On probation	
12/22/69	Injury accident	
3/24/70	Injury accident	
5/16/70	License suspended-responsible for accident (12/22/69)	
6/25/70	Injury accident	
9/04/70	Probation closed	
10/15/70	Suspension closed	
1/03/71	Injury accident	
1/20/71	Operator license issued	
5/29/71	Injury accident	
2/10/72	Current status-clear	

Five year summary:	Total accidents	14
	Total violations	4
	Total violation points	11
	Total suspensions	1

DRIVER: 1032
RESIDENCE: Indianapolis
LICENSE: Public passenger chauffeur

AGE: 65
SEX: Male
RESTRICTIONS: Glasses or contact lenses

During the years 1960 through 1966, this driver had a record of two license suspensions and eleven violation citations totaling 39 points.

DATE	ACTION	VIOLATION POINTS
1/04/67	Property damage accident	
1/05/67	Injury accident	
1/30/67	Property damage accident	
9/20/67	Turning violation	2
1/19/68	Property damage accident	
4/11/68	Turning violation	2
6/21/68	Property damage accident	
9/24/68	Injury accident	
11/29/68	Sign violation	2
3/25/69	Signal violation	4
8/16/69	Injury accident	
8/20/69	Speeding violation-47 mph in 30 mph zone	3
9/02/69	License suspended(1)-failure to appear for driver instruction	
9/09/69	Signal violation	4
9/29/69	On probation(1)	
9/29/69	Suspension(1) closed	
1/23/70	Public passenger chauffeur license issued	
2/15/70	Injury accident	
2/12/70	Turning violation	2
2/16/70	Probation(1) closed	
2/16/70	On probation(2)	
3/24/70	Turning violation	2
10/05/70	On probation(3)	

10/05/70	Probation(2) closed
1/04/71	Public passenger chauffeur license issued
3/24/71	Property damage accident
6/07/71	License suspended(2)-responsible for accident (3/24/71)
10/05/71	Probation(3) closed
2/10/72	Current status-suspended

It is difficult to understand why a driver with this record should be issued a public passenger chauffeur's license less than four months after his suspension was closed and while he was still on probation.

Five year summary:		
	Total accidents	9
	Total violations	8
	Total violation points	21
	Total suspensions	2

Drivers With Multiple Suspensions

The following three drivers are presented as examples of individuals with multiple license suspensions. All had three or more suspensions during the five year study period. The last driver's license was suspended during the entire study period.

DRIVER:	2683
RESIDENCE:	South Bend
LICENSE:	Operator
AGE:	37
SEX:	Male
RESTRICTIONS:	None

This driver had a history of ten licenses suspensions during the years 1954 through 1966. Three of those suspensions were for being responsible for accidents.

DATE	ACTION	VIOLATION POINTS
3/25/67	Property damage accident	
5/24/67	License suspended(1)-responsible for accident(3/25/67)	
6/03/67	Property damage accident	
8/02/67	License suspended(2)-responsible for accident(6/03/67)	
9/16/67	Speeding violation-80 mph in 65 mph zone	2
10/14/67	Injury accident	
10/25/67	License suspended(3)-failure to appear for driver instruction	
11/15/67	Suspension(1) closed	
12/13/67	License suspended(4)-responsible for accident(10/14/67)	
6/03/68	Suspension(2) closed	
6/30/68	Driving while suspended violation	
6/30/68	License suspended(5)-driving while suspended	
10/14/68	Suspension(4) closed	
4/30/69	Suspension(5) closed	
5/18/69	Property damage accident	
7/03/69	Speeding violation-45 mph in 30 mph zone	2
9/13/69	License suspended(6)-responsible for accident(5/18/69)	
5/18/70	Suspension(6) closed	
3/11/71	Suspension(3) closed	
3/23/71	Operator license issued	
9/16/71	Property damage accident	
9/28/71	Operator license issued	

11/25/71	License suspended(7)-responsible for accident(9/16/71)
4/21/72	Current status-suspended

Five year summary:		
	Total accidents	5
	Total violations	3
	Total violation points	4
	Total suspensions	7

DRIVER:	2018
RESIDENCE:	Fort Wayne
LICENSE:	Operator
AGE:	22
SEX:	Male
RESTRICTIONS:	None

During the years 1962 through 1966, this driver received eight violation citations. Four of these were serious violations, three of which required mandatory license suspension. His license was suspended one additional time during this period for failure to appear for driver instruction.

DATE	ACTION	VIOLATION POINTS
2/09/67	Property damage accident	
2/23/67	Reckless driving violation	6
4/10/67	License suspended(1)-responsible for accident(2/09/67)	
7/14/67	Suspension(1) closed	
9/13/67	Reckless driving violation	6
9/19/67	Property damage accident	
11/18/67	License suspended(2)-responsible for accident(9/19/67)	
12/03/67	Injury accident	

1/03/68	Sign violation	4
1/24/68	Speeding violation-63 mph in 45 mph zone	3
1/24/68	Driving while suspended violation	
2/09/68	Suspension(1) closed	
3/07/68	License suspended(3)-driving while suspended(1/24/68)	
9/19/68	Suspension(2) closed	
1/07/69	Suspension(3) closed	
1/23/69	Property damage accident	
2/17/69	Operator license issued	
5/04/69	Property damage accident	
5/22/69	Reckless driving violation	6
6/12/69	License suspended(4)-failure to appear for driver instruction	
9/12/69	On probation	
10/02/69	Suspension(4) closed	
6/12/70	Probation closed	
8/20/70	Negligent driving violation	2
9/30/70	Operator license issued	
7/03/71	Property damage accident	
7/14/71	Signal violation	4
9/02/71	License suspended(5)-responsible for accident(7/03/71)	
9/08/71	Speeding violation-89 mph in 70 mph zone	3
10/21/71	Suspension(5) closed	
2/16/72	Current status- 9 active violation points	

Five year summary:	Total accidents	6
	Total violations	9
	Total violation points	34
	Total suspensions	5

DRIVER: 1590
RESIDENCE: St. Anthony
LICENSE: Operator
AGE: 45
SEX: Male
RESTRICTIONS: None

This driver had a record of four license suspensions, two of which were for driving while intoxicated, during the years 1960 through 1966. His last suspension was still in effect during the first part of the year 1967.

DATE	ACTION	VIOLATION POINTS
5/29/67	Property damage accident	
6/10/67	Reckless driving violation	6
6/10/67	Leaving the scene of an accident violation	
6/10/67	License suspended(1)-leaving the scene of an accident(6/10/67)	
7/01/67	Property damage accident	
7/10/67	Failed to report accident violation	7
7/10/67	Driving while suspended violation	
9/02/67	Injury accident	
10/09/67	Reckless speed violation	6
10/09/67	Driving while intoxicated violation	
10/09/67	Driving while suspended violation	
12/10/67	License suspended(2)-driving while suspended(7/10/67)	
6/10/68	Suspension(2) closed	
6/10/68	License suspended(3)-driving while suspended(10/09/67)	
10/21/68	Driving while intoxicated violation	
10/21/68	Driving while suspended violation	

12/10/68	License suspended(4)-driving while intoxicated(10/09/67)	
11/01/69	Property damage accident	
11/01/69	Property damage accident	
11/03/69	Reckless driving violation	6
11/03/69	Driving while suspended violation	
12/10/69	License suspended(5)-driving while intoxicated(10/21/68)	
3/15/70	Driving while intoxicated violation	
3/15/70	Driving while suspended violation	
3/22/70	License suspended(6)-responsible for accident(11/01/69)	
5/21/70	Suspension(6) closed	
12/10/70	License suspended(7)-driving while suspended(10/21/68)	
12/10/71	License suspended(8)-driving while suspended(11/03/69)	
12/14/71	Suspension(7) closed	
12/10/72*	License suspended(9)-driving while intoxicated(3/15/70)	
12/10/73*	License suspended(10)-driving while suspended(3/15/70)	
2/15/72	Current status-suspended until 6/08/74	

*These are dates that the suspensions will automatically go into effect for the past violations listed.

The fact that this driver's license was suspended during the entire five year study period gives emphasis to the need for better controls to prevent unlicensed individuals from driving.

Five year summary:	Total accidents	5
	Total violations	13
	Total violation points	25
	Total suspensions	10

Fifteen or More Accidents During the Five Year Study Period

This last group of drivers are presented because they are certainly high accident drivers. All of them had fifteen or more accidents during the five year period. The last driver presented had a high of twenty-nine accidents.

DRIVER: 2670
RESIDENCE: Bloomington
LICENSE: Public passenger chauffeur
AGE: 40
SEX: Male
RESTRICTIONS: Glasses or contact lenses

This driver had a single speeding violation in 1965 and had his license suspended in 1966 for being responsible for an accident.

DATE	ACTION	VIOLATION POINTS
1/24/67	Property damage accident	
2/03/67	Property damage accident	
5/05/67	Property damage accident	
9/01/67	Property damage accident	
10/31/67	License suspended-responsible for accident(9/01/67)	
11/07/67	Property damage accident	
3/11/68	Suspension closed	
3/30/68	Speeding violation-56 mph in 45 mph zone	2
5/20/68	Public passenger chauffeur license issued	
6/15/68	Speeding violation-65 mph in 55 mph zone	2
10/29/68	Injury accident	

2/11/69	Property damage accident
3/27/69	Property damage accident
12/15/69	Property damage accident
12/20/69	Property damage accident
4/17/70	Property damage accident
9/24/70	Public passenger chauffeur license issued
10/26/70	Property damage accident
1/29/71	Property damage accident
5/26/71	Property damage accident
9/28/71	Public passenger chauffeur license issued
10/19/71	Injury accident
2/10/72	Current status-clear

Five year summary:	Total accidents	15
	Total violations	2
	Total violation points	4
	Total suspensions	1

DRIVER:	1395
RESIDENCE:	Indianapolis
LICENSE:	Public passenger chauffeur
AGE:	47
SEX:	Male
RESTRICTIONS:	None

This driver had two previous license suspensions, one in 1963 and one in 1964. He also had four violation citations, three of which were in 1963 and one in 1964. A public passenger chauffeur's license was issued to him in January 1965, and his violation record has been clear since that date.

DATE	ACTION	VIOLATION POINTS
1/13/67	Property damage accident	
3/14/67	License suspended-responsible for accident(1/13/67)	
3/27/67	Property damage accident	
6/12/67	Property damage accident	
8/21/67	Property damage accident	
10/11/67	Property damage accident	
10/23/67	Suspension closed	
11/29/67	Property damage accident	
2/13/68	Public passenger chauffeur license issued	
5/20/68	Property damage accident	
7/23/68	Property damage accident	
9/24/68	Property damage accident	
5/13/69	Property damage accident	
9/18/69	Property damage accident	
10/08/69	Property damage accident	
11/26/69	Injury accident	
1/18/70	Injury accident	
11/13/70	Injury accident	
12/17/70	Public passenger chauffeur license issued	
7/22/71	Property damage accident	
10/22/71	Injury accident	
12/30/71	Public passenger chauffeur license issued	
2/10/72	Current status-clear	

Five year summary:	Total accidents	17
	Total violations	0
	Total violation points	0
	Total suspensions	1

DRIVER: 1396
RESIDENCE: Indianapolis
LICENSE: Public passenger chauffeur
AGE: 33
SEX: Male
RESTRICTIONS: Glasses or contact lenses, outside rearview mirror

This driver had eight violation citations on his record during the years 1955 and 1962. He also had three suspensions during this same period for failure to appear for driver instruction.

DATE	ACTION	VIOLATION POINTS
1/21/67	Property damage accident	
3/19/67	Property damage accident	
5/10/67	Injury accident	
5/11/67	Property damage accident	
11/07/67	Property damage accident	
1/18/68	Property damage accident	
1/19/68	Property damage accident	
3/18/68	Speeding violation-50 mph in 30 mph zone	2
7/13/68	Injury accident	
8/05/68	Injury accident	
3/09/69	Property damage accident	
9/04/69	Property damage accident	
10/01/69	Property damage accident	
10/15/69	Property damage accident	
11/10/69	Property damage accident	
1/06/70	Property damage accident	
1/30/70	Turning violation	2
2/06/70	Property damage accident	
4/05/70	Property damage accident	

4/10/70	Property damage accident	
5/15/70	Public passenger chauffeur license issued	
6/22/70	Property damage accident	
6/23/70	Injury accident	
7/06/70	License suspended(1)-responsible for accident(2/06/70)	
9/10/70	Suspension(1) closed	
10/18/70	Property damage accident	
10/30/70	Property damage accident	
2/05/71	Property damage accident	
2/22/71	Signal violation	2
5/24/71	Public passenger chauffeur license issued	
10/29/71	License suspended(2)-judgement	
12/07/71	Suspension(2) closed	
2/10/72	Current status- 2 active violation points	

Five year summary:	Total accidents	23
	Total violations	3
	Total violation points	6
	Total suspensions	2

DRIVER: 2745
RESIDENCE: Indianapolis
LICENSE: Public passenger chauffeur
AGE: 29
SEX: Male
RESTRICTIONS: None

This driver had one violation for speeding for which his license was suspended for one month in 1960.

DATE	ACTION	VIOLATION POINTS
1/20/67	Property damage accident	
6/22/67	Property damage accident	
9/05/67	Property damage accident	
10/26/67	Injury accident	
10/29/67	Property damage accident	
11/11/67	Property damage accident	
3/29/68	Chauffeur license issued	
7/06/68	Property damage accident	
8/29/68	Injury accident	
11/06/68	Property damage accident	
1/11/69	Injury accident	
5/30/69	Injury accident	
6/05/69	Property damage accident	
6/17/69	Property damage accident	
7/11/69	Speeding violation-44 mph in 30 mph zone	2
10/25/69	Property damage accident	
12/24/69	Property damage accident	
12/30/69	Property damage accident	
1/02/70	Injury accident	
1/07/70	Property damage accident	
1/12/70	Signal violation	2
1/16/70	Injury accident	
4/14/70	Injury accident	
5/04/70	Property damage accident	
5/18/70	Signal violation-local ordinance	2
6/12/70	Property damage accident	
8/15/70	Injury accident	
9/03/70	Injury accident	
9/18/70	Property damage accident	
11/08/70	Property damage accident	
2/12/71	Property damage accident	
2/18/71	Injury accident	
5/10/71	Operator license issued	

5/11/71	Property damage accident	
6/24/71	Signal violation-local ordinance	2
6/24/71	Signal violation-local ordinance	2
7/09/71	Public passenger chauffeur license issued	
2/10/72	Current status- 6 active violation points	

The longest period that this driver was able to go during the five year study period without having an accident was less than six months. During the same period he averaged approximately one accident every two months.

Five year summary:	Total accidents	29
	Total violations	5
	Total violation points	10
	Total suspensions	0

Summary Comments

The 15 case studies of high accident drivers in 1967 which have been presented indicate the dissimilar characteristics which are available from the driver's and accident records. Three cases are presented of high accident drivers who had no driving violations on their Indiana record. Two drivers are discussed who had some violations but who have had a much improved accident record after a bad 1967. Three case studies are presented of drivers who following a high accident record in 1967 continued to have a large number of accidents during the next four years. Violations, both predating and in the study period, are rather numerous for these three. Three drivers with more than one suspension of

their license, at least one of which was for driving while suspended, are also presented. These drivers, however, had only 5, 6 and 5 accidents during the five year period of which three or more were in 1967. Their accident record since 1967 has not been exceptionally excessive.

Finally, the only four drivers who had 15 or more accidents during the five years are reviewed. All of them have a history of violations and at least one suspension. The violations, however, in some of the cases were very few in the five year study period.

There is some indication that a study of the history of a few driver's driver and accident records over a period of several years would permit a reasonably accurate prediction of their future accident involvement. The evidence, however, must be so great that only an extremely small number of drivers could be so rated. Unfortunately, it appears this can be predicted only after they have had numerous accidents and violations. Even if these drivers were removed from the road - which driver license suspension does not do - only an extremely small reduction in the accidents in any one year would result.

It should also be noted that a study of drivers and their accident records is not now easily done in Indiana. Accident records and driver records are maintained separately and accident records are not maintained on a driver basis. The result is that a driver's records do not show his accident history.

CONCLUSIONS

The following conclusions concerning high accident drivers summarize the findings of this research.

1. As a group, the accident record of drivers who are involved in three or more accidents during a particular year tends to show much improvement during following years.
2. A large proportion of those drivers who are involved in three or more accidents during a particular year remain accident free during the following four years.
3. Nearly all high accident drivers are male.
4. Drivers with chauffeur's licenses and particularly public passenger chauffeur's licenses account for a large proportion of the individuals who are high accident drivers during one year and continue to be high accident drivers during the following years.
5. High accident drivers are likely to be residents of large urban areas.
6. The violation record of a driver who has a high accident involvement during a particular year has little relationship to his accident record in the following years.

7. The following are applicable to the average driver in a high accident group:
   a. The more accidents in which a driver is involved during a particular year increases the probability that he will be involved in additional accidents during the following years.
   b. As the number of accidents that a driver has increases, the seriousness of these accidents in terms of injury and fatality accidents tends to decrease.
8. In general, the accident record of a driver during one year, even when combined with information available in the Indiana drivers records, does not enable a reasonable prediction of the drivers accident record for future years. In a very few cases, where a history of numerous violations and accidents are recorded, a reasonable prediction of continued high accident involvement can possibly be made.

RECOMMENDATIONS

It would be very informative to be able to obtain additional information about high accident drivers that is not available from Indiana driver or accident records. Much more knowledge could be realized about high accident drivers if qualified researchers were allowed to conduct thorough investigations and interviews of selected drivers.

The accident record file is maintained on a yearly basis and in order to determine an individuals accident history it is necessary to search the records for each year that the history is desired. It is recommended that the accident record file be coded by driver license numbers and that an accident record file be maintained for each driver involved in one or more accidents.

At the present time it is very time consuming to correlate an individuals accident record with his driver record. The accident record file is maintained by the State Police while the driver record file is maintained by the Bureau of Motor Vehicles and both files are completely separate. It is recommended that these files be linked together. A properly designed system would make it simple for personnel from either the State Police or the Bureau of Motor Vehicles to obtain a record of an individual's complete driver and

accident history. This would greatly facilitate identification of problem drivers.

Additional study is needed on that class of drivers who hold chauffeur's and public passenger chauffeur's licenses. It appears that their involvement in the high accident groups is excessive to the proportion to their numbers in the driving population. This may be due to their increased exposure rate. Nevertheless, it appears that more stringent licensing controls would be in order for these drivers, particularly those in the public passenger chauffeur class.

LIST OF REFERENCES

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1. Campbell, B. J., "Who Really Causes the Accidents?", Signal 99, North Carolina Governor's Highway Safety Program, Vol. 1, No. 2, Spring 1971.

2. Carlson, W. L., "Identifying the Problem Driver from State Driver Records", Research, Michigan University, Ann Arbor, May 1968, pp. 1-7.

3. Coppin, R. S., Peck, R. C., The 1964 California Driver Record Study, Part 8, The Prediction of Accident Involvement Using Concurrent Driver Record Data, Report No. 20, Research and Statistics Section, California Department of Motor Vehicles, Sacramento, January 1967.

4. Crancer, Alfred, Jr., "Involvement of the Problem Driver in Fatal Motor Vehicle Accidents", Traffic Quarterly, October 1967, pp. 601-610.

5. Crancer, Alfred, Jr., Accident and Violation Rates for Washington Drivers, Washington Department of Motor Vehicles, Olympia, Report No. 003, May 1967.

6. Crancer, Alfred, Jr., McMurray, Lucille, Credit Ratings as a Predictor of Driving Behavior and Improvement, Washington Department of Motor Vehicles, Olympia, Report No. 010, May 1968.

7. Goldstein, Leon G., "Psychological Aspects of Traffic Accidents", Traffic Digest and Review, Vol. 12, No. 6, July 1964, pp. 10-12, 23.

8. Homburger, Wolfgang S., "On the Analysis of Accident Trends", Accident Analysis and Prevention, Vol. 1, 1969, pp. 101-104.

9. Johnson, H. M., "The Detection and Treatment of Accident Prone Drivers", Psychological Bulletin, No. 43, 1946, pp. 489-533.

10. Kaestner, Noel F., "The Similarity of Traffic Involvement Records of Young Drivers and Drivers in Fatal Traffic Accidents", Traffic Safety Research Review, Vol. 8, No. 2, 1964, pp. 34-40.

11. McFarland, Ross, "Psychological and Behavioral Aspects of Automobile Accidents", Traffic Safety Research Review, Vol. 12, No. 3, September 1968, pp. 71-80.

12. O'Neall, P. A., Relationship of Accident Involvement and Number of Citations: 1966 Data, Washington Department of Motor Vehicles, Olympia, Report No. 006, 1967.

13. Penn, H. S., Causes and Characteristics of Single Car Accidents, Parts 3 & 4, California Highway Patrol, Sacramento, January 1965.

14. Schuster, D. H., Guilford, J. P., An Analysis of Accident Repeater and Chronic Violater Drivers, Traffic Project Report No. 1, U.S. Public Health Grant M-2353, Los Angeles, California, 1956.

15. Schuster, D. H., "Prediction of Follow-up Driving Accidents and Violations", Research Review, March 1968, pp. 17-21.

16. Shaw, L., Sichel, H. S., "The reduction of Accidents in a Transport Company by the Determination of the Accident Liability of Individual Drivers", Research Review, December 1961.

17. Sonquist, J. A., Morgan, J. N., The Detection of Interaction Effects, 5th ed., Cushing-Malloy, Inc., 1969.

18. Waller, Julian A., "Traffic Accidents, A Medical Viewpoint, Part 1," Automotive Industries, Vol. 136, No. 8, April 15, 1967, pp. 87-90.

19. Waller, Julian A., "Traffic Accidents, A Medical View-Point, Part 2," Automotive Industries, Vol. 136, No. 10, May 15, 1967, pp. 92-94.

20. Zylman, Richard, "Comparing Collision Drivers with the Driving Population-at-Risk: A Challenge to Conventional Methods," Behavioral Research in Highway Safety, Vol. 1, Summer 1970, pp. 78-86.

General References

Adams, James R., "Personality Variables Associated With Traffic Accidents," Behavioral Research in Highway Safety, Vol. 1, No. 1, January 1970, pp. 3-18.

Baker, Susan P., Characteristics of Fatally Injured Drivers - Final Report, School of Hygiene and Public Health, John Hopkins University, Baltimore, Maryland, February, 1970.

Berkey, Ben, "The Average Man - and the Non-average Driver," California Highway Patrolman, Vol. 32, No. 11, January 1969, pp. 7, 16, 32, 36.

Brenner, R., Mosher, W. W., The Use of Mass, Non-specific Accident Data in Research, Institute of Transportation and Traffic Engineering, University of California at Los Angeles, 1965.

Burg, Albert, "The Stability of Driving Record Over Time", Accident Analysis and Prevention, Vol. 2, No. 1, May 1970, pp. 57-65.

Coppin, R. S., Samuels, I., Control of the Negilgent Driver, Part I, Characteristics of Negligent Drivers, C.F.S.T.I. PB 177 647, 1961.

Coppin, R. S., Van Oldenbeek, G., Control of the Negligent Driver, Part II, Driving Performance of Negligent Drivers, C.F.S.T.I. PB 177 648, 1962.

Coppin, R. S., et al., The Fatal Accident Reexamination Program in California, California Department of Motor Vehicles, Sacramento, January 1966.

Crancer, Alfred, Jr., Quiring, D. L., Driving Records of Persons Arrested for Illegal Drug Use, Washington Department of Motor Vehicles, Olympia, Report No. 011, May 1968.

Garrett, J. W., Tharp, J. B., Development of Improved Methods for Reduction of Traffic Accidents, National Cooperative Highway Research Program, Report 79.

Greenshields, B. D., Driving Behavior and Traffic Accidents, Transportation Institute, University of Michigan, Ann Arbor, November 1, 1962.

Greenshields, B. D., Platt, F. N., "Development of a Method of Predicting High Accident and High Violation Drivers", Journal of Applied Psychology, Vol. 51, No. 3, 1967, pp. 205-210.

Harrington, David M., "Factor Analysis of Driver Record", Traffic Safety and Research Review, Vol. 12, No. 3, September 1968, pp. 81-87.

Kraus, A. S., et al., "Pre-driving Identification of Young Drivers with a High Risk of Accidents", Journal of Safety, Research, Vol. 2, No. 2, June 1970, pp. 55-66.

Levonian, E., Prediction of Negligent Operators, Institute of Transportation and Traffic Engineering, University of California at Los Angeles, December 1963.

Levonian, E., "Prediction of Accidents and Violations Using Non-driving Predictors", American Association of Motor Vehicle Administrators-Summary of Proceedings: Research Conference and Workshop, April 4-7, 1966, pp. 6-8.

McFarland, Ross, "Measurement of Human Factors in Accident Research", Traffic Digest and Review, Vol. 14 No. 6, June 1966, pp. 4-11, 19, 20.

Rice, R. A., Tindall, J. T., "Police Use of Accident and Violation Records in Queensland for Accident Reduction and Driver Improvement Purposes," Australian Road Research, Proceeds of Third Conference, Vol. 3, Pt. 1, 1966, pp. 604-627.

Schuster, D. H., Guilford, J. P., The Psychometric Prediction of Problem Drivers, University of Southern California, Los Angeles, December 1961.

Shaw, L., Sichel, H. S., Accident Proneness, Pergamon Press, New York, 1971.

Stoner, J. E., et al., Highway Traffic Accident Records, Their Analysis, Use, and Improvement, Indiana University, 1966.

Waller, Julian A., "The High Traffic Accident Rate Among the Middle-aged, A problem and Its Solution, Part II", Traffic Digest and Review, Vol. 15, No. 9, September 1967, pp. 13-18.

APPENDICES

APPENDICES

Appendix A

State Record Summaries

The tables in this Appendix provide accident record summaries as compiled by the Indiana State Police and number of licensed drivers as compiled by the Indiana Bureau of Motor Vehicles.

Table 16. Licenses On File In Indiana.

	Operator		Chauffeur		Public Passenger Chauffeur	
	Male	Female	Male	Female	Male	Female
1971	1,314,664	1,281,718	183,814	1,545	18,932	2,992
Subtotal	2,596,382		185,359		21,924	
Grand Total			2,803,665			
1970	1,265,409	1,223,305	186,958	1,473	19,252	2,730
Subtotal	2,488,714		188,431		21,982	
Grand Total			2,699,127			
1969	1,337,596	1,279,664	200,385	1,265	19,028	2,501
Subtotal	2,617,260		201,650		21,529	
Grand Total			2,840,439			
1968	1,203,611	1,150,002	196,957	1,080	18,877	2,071
Subtotal	2,353,613		198,037		20,948	
Grand Total			2,572,598			
1967	1,258,299	1,157,635	219,700	1,261	22,059	2,137
Subtotal	2,415,934		220,961		24,196	
Grand Total			2,661,091			

The figures in this table reflect the number of licenses on file with the Bureau of Motor Vehicles at the end of a particular year. As the files are not purged every year to remove records of drivers who are deceased or have migrated, the figures are only an approximation of the actual number of drivers in Indiana.

Table 17. Standard Summary of Motor Vehicle Traffic Accidents

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council, Chicago — In INDIANA (State) — For CALENDAR YEAR 1967 (Month or other period)

1. TYPE OF ACCIDENT	Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Total Killed	Injured: Total	a	b	c
Motor Vehicle									
1. Ran off road	17779	326	6467	10986	379	9157	4454	2950	1753
2. Overturned on road	720	10	373	337	10	510	218	189	103
3. Pedestrian	3124	166	2958	-	166	3104	1158	1198	748
4. Motor vehicle in traffic	117976	555	29893	87528	709	49054	13306	13056	22492
5. Parked motor vehicle	20578	21	1915	18642	23	2408	1079	711	618
6. Railroad train	743	78	263	402	98	383	201	89	93
7. Bicyclist	1271	30	1233	8	32	1322	466	570	286
8. Animal	1218	1	160	1057	1	207	76	76	55
9. Fixed object	11413	116	3690	7607	134	5096	2656	1521	919
10. Other object	341	2	80	259	2	105	44	33	28
11. Other non-collision	523	14	186	323	15	221	112	81	28
Farm Veh.	200	1	78	121	1	112	48	35	29
Totals	175886	1320	47296	127270	1570	71679	23818	20509	27352

Note: The three categories of injuries follow the Manual of Uniform Definitions of Motor Vehicle Accidents.
a. Bleeding wound, dislocated member, or any condition that required victim be carried from the scene.
b. Other visible injuries such as bruises, abrasions, swelling, limping, or other painful movement.
c. Complaint of pain, without visible signs of injury, or momentary unconsciousness.

SUMMARY OF All Reported ACCIDENTS

Legally reportable accidents are those involving death, bodily injury or property damage of $ 50.00 or more

☒ In the accident

☐ To the property of one person

This summary includes reports and information available on March 1, 1968

REPORT PREPARED BY

INDIANA STATE POLICE
100 N. Senate Avenue
Indianapolis, Indiana 46204
Robt A. O'Neal Supt.

2A COMPARATIVE TOTALS	Changes-1967 vs 1966: All accidents	Persons killed	Persons injured	This Year to Date: All accidents	Persons killed	Persons injured	Same Period Last Year: All accidents	Persons killed	Persons injured	Change Cumulative, Each Year-end
1. Ran off road	+1893	+81	+746	17779	379	9157	15886	298	8411	+33 %
2. Overturned on road	- 97	- 2	-124	720	10	510	817	12	634	-17 %
3. Pedestrian	+ 161	Equal	+187	3125	166	3104	2964	166	2917	Same %
4. Motor vehicle in traffic	+5349	-60	-263	117976	709	49054	112627	769	49317	- 8 %
5. Parked motor vehicle	+ 244	+10	-154	20578	23	2408	20334	13	2562	+77 %
6. Railroad train	+ 61	- 2	- 20	742	98	383	681	100	403	- 2 %
7. Bicyclist	- 43	+11	- 31	1271	32	1322	1314	21	1353	+52 %
8. Animal	+ 120	+ 1	+ 18	1218	1	207	1098	-	189	+∞ %
9. Fixed object	-1117	-44	-588	11413	134	5096	12530	178	5684	-25 %
10. Other object	+ 52	+ 1	+ 18	341	2	105	289	1	87	+100 %
11. Other non-collision	- 40	+10	- 45	523	15	221	563	5	266	+200 %
Farm Veh.	+ 27	- 2	+ 6	200 *	1	112	173	3	106	- 67 %
Totals	+6610	+ 4	-250	175886	1570	71679	169276	1566	71929	+ .2 %

*97 death was of driver of tractor W. Wheeldon, age 32, killed in July.

2B MILEAGE RATES	This Year To Date	Last Year Same Period	Percent Change
1. Motor vehicle traffic deaths	1570	1566	+.2 %
2. Estimated motor vehicle mileage traveled (millions)	28351	26398	+7.4 %
3. Death rate per 100,000,000 vehicle-miles	5.53	5.93	-6.7 %
4. Fatal accident rate per 100,000,000 vehicle-miles	4.65	4.87	-4.5 %
5. Fatal Acc.	1320	1287	+2.5 %
6. Persons Inj.	71679	71929	-.3 %

3. LOCATION	Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured	TOLL ROAD ONLY — Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured
URBAN: 1. 2,500 to 10,000	14355	49	3124	11182	59	4419						
2. 10,000 to 25,000	16467	45	4004	12418	50	5822						
3. 25,000 to 50,000	16607	26	3876	12705	28	5402						
4. 50,000 to 100,000	10966	27	2699	8240	29	3840						
5. 100,000 to 250,000	33902	99	7909	25894	106	11447						
6. 250,000 or more	25879	66	6697	19116	70	9515						
Under 1000	2154	20	472	1662	26	693						
1000-2500	3826	25	767	3034	31	1130						
Total urban	124156	357	29548	94251	399	42268	907	15	242	650	18	447
RURAL: 1. Controlled access highway												
2. State routes	14311	319	5116	8876	404	8801						
3. County routes	22869	281	7433	15155	314	11289						
4. US roads	12096	306	4394	7396	386	7949						
INTERSTATE	1547	42	563	942	49	925						
Total rural *	50823	948	17506	32369	1153	28964						
Total urban and rural **	175886	1320	47296	127270	1570	71679	907	15	242	650	18	447

Does not include Toll Road.... ** Does include Toll Road....

5. TIME (Hour beginning)	Total: All	Fatal	Monday: All	Fatal	Tuesday: All	Fatal	Wednesday: All	Fatal	Thursday: All	Fatal	Friday: All	Fatal	Saturday: All	Fatal	Sunday: All	Fatal	Not stated: All	Fatal
Before Noon: 0. Midnight	4849	60	340	4	417	7	423	2	529	5	563	9	1303	20	1274	13		
1. 1:00	3949	66	195	2	315	8	287	9	370	7	435	9	1095	9	1222	22		
2. 2:00	3538	69	135	2	278	3	224	4	311	5	369	4	974	23	1247	28		
3. 3:00	2153	33	107	1	180	3	156	2	202	4	238	7	618	10	652	6		
4. 4:00	1333	33	100	2	109	3	107	3	124	3	156	3	395	9	342	10		
5. 5:00	1330	18	118	2	141	1	148	3	179	5	183	2	296	3	265	2		
6. 6:00	3971	36	634	6	633	5	609	2	750	3	695	3	361	11	289	6		
7. 7:00	7906	38	1443	6	1369	10	1353	5	1620	7	1259	7	579	1	283	2		
8. 8:00	6775	39	1185	4	1136	7	1088	7	1202	8	1106	5	733	3	325	5		
9. 9:00	5764	34	891	6	770	4	747	4	832	2	797	4	1025	7	702	7		
10. 10:00	6851	36	919	2	830	8	775	2	919	7	1081	4	1516	6	811	7		
11. 11:00	9091	42	1206	8	1110	3	1125	6	1219	2	1330	4	2008	6	1093	13		
After Noon: 12. Noon	8704	52	1182	5	1066	8	1104	8	1151	7	1434	3	1655	10	1062	11		
13. 1:00	8788	50	1207	7	1078	6	1045	6	1105	8	1361	3	1777	12	1215	8		
14. 2:00	9894	48	1361	7	1244	7	1187	3	1240	7	1587	6	1836	11	1439	7		
15. 3:00	14076	63	2123	9	1904	10	1981	4	1963	9	2536	17	1981	6	1588	8		
16. 4:00	16117	80	2405	9	2211	15	2202	11	2450	9	3123	14	2090	13	1633	9		
17. 5:00	13762	77	1922	11	1900	11	1823	6	2009	13	2840	14	1855	12	1413	10		
18. 6:00	9589	89	1196	11	1086	12	1132	10	1231	8	1941	21	1674	13	1329	14		
19. 7:00	8722	86	1031	12	924	10	1006	4	1093	9	1864	16	1695	19	1109	16		
20. 8:00	7231	52	881	9	781	5	897	3	915	15	1419	10	1169	12	869	5		
21. 9:00	6704	63	821	7	760	9	868	7	871	8	1404	10	1279	13	701	9		
22. 10:00	6331	72	680	8	673	6	738	8	787	9	1464	18	1371	16	618	7		
23. 11:00	5798	74	573	11	507	8	620	3	649	11	1139	13	1483	24	527	4		
24. Not stated	2660	3	358	-	343	1	338	-	345	-	484	-	476	2	316	-		
Totals	175886	1320	23013	151	21798	170	21983	122	24066	171	31158	206	31544	271	22324	229		

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Calendar Year 1967 - STATEWIDE INDIANA MOTOR VEHICLE TRAFFIC ACCIDENTS

4 AGE OF CASUALTY	Number of Persons Killed									Number of Persons Injured								
	Total Killed			Pedestrians			Bicyclists			Total Injured			Pedestrians			Bicyclists		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1. 0 to 4	58	36	22	22	15	7	-	-	-	2525	1370	1155	422	266	156	15	12	3
2. 5 to 9	60	38	22	26	20	6	10	6	4	3539	1992	1547	1063	719	364	451	362	89
3. 10 to 14	64	40	24	14	8	6	14	13	1	3243	1739	1504	462	266	196	572	482	90
4. 15 to 19	291	218	73	11	8	3	6	6	-	14462	8590	5872	282	156	126	128	111	17
5. 20 to 24	211	163	48	10	8	2	-	-	-	10460	6141	4319	102	64	38	18	15	3
6. 25 to 34	209	163	46	6	5	1	2	2	-	10858	6394	4464	164	102	62	7	6	1
7. 35 to 44	177	124	53	11	8	3	-	-	-	8653	4544	4109	141	94	47	10	9	1
8. 45 to 54	164	117	47	13	8	5	-	-	-	7137	3625	3512	158	99	59	4	2	2
9. 55 to 64	127	96	31	16	11	5	-	-	-	4715	2380	2335	158	86	72	8	8	-
10. 65 to 74	117	72	45	21	14	7	-	-	-	2498	1211	1287	125	69	56	5	4	1
11. 75 & older	91	59	32	23	16	7	-	-	-	966	510	456	91	57	34	1	1	-
12. Not stated	1	1	-	1	1	-	-	-	-	2623	1117	1506	103	71	32	64	58	6
Totals	1570	1127	443	174	122	52	32	27	5	71679	39613	32066	3291	2049	1242	1283	1070	213

6 DIRECTIONAL ANALYSIS – An accident consisting of a series of collisions, overturning etc., is classified according to the first event on the road

A TWO MOTOR VEHICLE ACC.		Total	Fatal Accidents	Injury Accidents	Property Damage Acc.
At Intersections	1. Entering at angle	31705	180	9535	21990
	2a. From same direction – both going straight	2802	4	478	2320
	b. Same – one turn, one straight	7006	7	1361	5638
	c. Same – one stopped	16766	4	4270	12492
	d. Same – all others	549	-	55	494
	3a. From opposite direction – both going straight	674	14	203	457
	b. Same – one left turn, one straight	5613	33	1793	3787
	c. Same – all others	467	4	67	396
	4. Not stated	1	-	-	1
	Totals	65583	246	17762	47575

B TWO MOTOR VEHICLE ACC.		Total	Fatal Accidents	Injury Accidents	Property Damage Acc.
Not at Intersections	1. Going opposite direction – both moving	7543	220	2271	5052
	2. Going same direction – both moving	11702	48	2679	8975
	3a. One car parked	20629	21	1924	18684
	b. One car stopped in traffic	13867	15	4230	9622
	4a. One car entering parked position	357	-	20	337
	b. One car leaving parked position	4038	1	234	3803
	5a. One car entering alley or driveway	5777	10	1409	4358
	b. One car leaving alley or driveway	8496	14	1233	7249
	6. All others	760	2	124	634
	7. Not stated	2	-	-	2
	Totals	73171	331	14124	58716

C PEDESTRIAN ACCIDENTS		All Pedestrian Accidents	Fatal Accidents			Non-Fatal Injury Accidents		
			Total	Intersection	Non-intersection	Total	Intersection	Non-intersection
1. Car going straight		2704	164	18	146	2540	652	1888
2. Car turning right		85	1	1	-	84	73	11
3. Car turning left		261	1	1	-	260	237	23
4. Car backing		61	-	-	-	61	8	53
5. All others		13	-	-	-	13	3	10
6. Not stated		-	-	-	-	-	-	-
Totals		3124	166	20	146	2958	973	1985

D ALL OTHER ACCIDENTS			Total	Fatal Accidents	Injury Accidents	Property Damage Acc.
At Intersections	Collision with	1. Non-motor vehicle – train, bicycle, etc.	534	5	498	31
		2. Fixed object in road	2322	4	718	1600
		3. Overturned in road	108	1	57	50
		4. Left road	1241	6	514	721
Not at Intersections	Collision with	5. Non-motor vehicle – train, bicycle etc.	2698	104	1158	1436
		6. Fixed object in road	9091	112	2972	6007
		7. Overturned in road	612	9	316	287
	Left road	8. At curve	5148	132	2022	2994
		9. Straight road	11390	188	3931	7271
10. Fell from moving vehicle			146	10	125	11
11. All others			718	6	141	571
12. Not stated			-	-	-	-
Totals			34008	577	12452	20979

7. PEDESTRIAN ACTIONS BY AGE	Pedestrians Killed	Ages of Pedestrians Killed and Injured							
		Total	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 44	45 to 64	65 & Older	Not Stated
1a. Crossing or entering roadway - at intersection	23	812	32	215	120	74	27	84	125	125	10
b. Same – not at intersection	81	1315	257	583	163	64	20	70	83	63	12
2a. Walking in roadway – with traffic	15	106	1	10	14	32	8	12	15	10	4
b. Same – against traffic	6	57	2	7	8	13	1	8	9	7	2
3. Standing on roadway	4	85	4	3	5	18	10	25	11	7	2
4. Getting on or off other vehicle	1	28	2	4	2	4	5	7	3	1	-
5. Pushing or working on vehicle in roadway	2	40	-	1	-	2	6	24	7	-	-
6. Other working in roadway	-	13	-	-	-	1	-	8	4	-	-
7. Playing in roadway	4	90	34	38	17	1	-	-	-	-	-
8. Other in roadway	10	312	48	80	46	27	17	43	32	13	6
9. Not in roadway	10	83	7	9	23	20	4	10	6	2	2
10. Not stated	17	524	57	159	78	37	15	30	50	32	66
Totals	174	3465	444	1109	476	293	113	321	345	260	104

Drivers of vehicles in proper parking locations are excluded

8 AGE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. 15 & younger	675	13	241
2. 16	8628	64	2610
3. 17	13046	77	3780
4. 18 to 19	27245	184	8016
5. 20 to 24	45160	311	13497
6. 25 to 34	54226	395	16174
7. 35 to 44	45554	336	13284
8. 45 to 54	36372	256	10420
9. 55 to 64	23566	167	6731
10. 65 to 74	11561	97	3103
11. 75 & older	3638	58	879
12. Not stated	32240	16	2901
Totals	301921	1974	81656

9 SEX OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Male	217275	1630	58759
2. Female	74306	328	21917
3. Not stated	10340	16	980
Totals	301921	1974	81656

10 RESIDENCE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Local resident	225723	1076	60913
2. Residing elsewhere in state	43984	583	13155
3. Non-resident of state	23768	303	6740
4. Not stated	8446	12	848
Totals	301921	1974	81656

Vehicles in proper parking locations are included

12 TYPE OF VEHICLE	All Accidents	Fatal Accidents	Injury Accidents
1. Passenger car	285378	1592	74483
2. Passenger car and trailer	254	-	52
3. Truck or truck tractor	26638	174	6214
4. Truck tractor and semi-trailer	4995	157	1351
5. Other truck combination	334	1	57
6. Farm tractor and/or farm equip.	318	14	110
7. Tractor	499	1	134
8. Bus	870	3	194
9. School bus	452	3	97
10. Motorcycle	2354	56	1810
11. Motor scooter or motor bicycle	142	4	125
12. Others and not stated	5485	7	388
Totals	327739	2012	85015
Special vehicles included above			
13. Emergency (including privately owned)	240	1	78
14. Military vehicles	6	2	-
15. Other publicly owned vehicles	186	9	51

13 ROAD SURFACE CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Dry	104495	979	30086
2. Wet	45221	267	12843
3. Snowy or icy	17737	60	3318
4. Other	717	10	218
5. Not stated	7716	4	831
Totals	175886	1320	47296

14 KIND OF LOCATION	All Accidents	Fatal Accidents	Injury Accidents
1. Built-up	127790	481	32718
2. Not built-up	37930	833	13397
3. Not stated	10166	6	1181
Totals	175886	1320	47296

15 LIGHT CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Daylight	110904	607	29154
2. Dawn or dusk	7468	58	1912
3. Darkness	54294	646	15927
4. Not stated	3220	9	303
Totals	175886	1320	47296

Contributing Circumstances (Table 11) compiled only from police reports.

11 CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	Fatal Accidents	Injury Accidents
1. Speed too fast	12034	235	4839
2. Failed to yield right of way	23349	161	7258
3. Drove left of center	6685	194	2223
4. Improper overtaking	4096	40	1278
5. Passed stop sign	2145	44	910
6. Disregarded traffic signal	3317	42	1412
7. Followed too closely	10219	6	3747
8. Made improper turn	4831	23	980
9. Other improper driving	19899	125	4914
10. Inadequate brakes	1735	10	549
11. Improper lights	394	4	123
12. Had been drinking	7772	131	3124
Totals	96476	1015	31357

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Table 17. (Continued)

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council, Chicago — In INDIANA (State) — For Calendar Year 1968 (Month or other period)

1 TYPE OF ACCIDENT	Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Total Killed	Injured: Total	a	b	c
Motor Vehicle									
1. Ran off road	19062	325	6981	11756	368	9694	4622	3017	2055
2. Overturned on road	711	4	380	327	6	491	183	201	107
3. Pedestrian	2943	183	2760	-	186	2911	1029	1158	724
4. Motor vehicle in traffic	120473	511	30491	89471	665	49726	12878	13017	23831
5. Parked motor vehicle	21705	23	2012	19670	25	2484	1066	764	654
6. Railroad train	722	54	266	402	70	389	205	99	85
7. Bicyclist	1206	16	1179	11	16	1245	392	593	260
8. Animal	1486	3	155	1328	3	185	61	68	56
9. Fixed object	12896	139	4150	8607	154	5799	2940	1680	1179
10. Other object	380	1	74	305	1	102	38	41	23
11. Other non-collision	542	11	180	351	11	220	99	74	47
Farm Veh.	266	13	89	164	14	139	48	62	29
Totals	182392	1283	48717	132392	1519	73385	23561	20774	29050

Collision of Motor vehicle with

Note: The three categories of injuries follow the Manual of Uniform Definitions of Motor Vehicle Accidents.
a. Bleeding wound, dislocated member or any condition that required victim be carried from the scene
b. Other visible injuries such as bruises, abrasions, swelling, limping or other painful movement
c. Complaint of pain, without visible signs of injury, or momentary unconsciousness.

SUMMARY OF All Reported ACCIDENTS

Legally reportable accidents are those involving death, bodily injury or property damage of $50.00 or more

[X] in the accident

[ ] To the property of one person

This summary includes reports and information available on March 12, 1969

REPORT PREPARED BY

Indiana State Police
100 N. Senate Ave.
Indianapolis, Indiana 46204
Robert K. Konkle, Supt.

2A COMPARATIVE TOTALS	Same Month Last Year: All accidents	Persons killed	Persons injured	This Year to Date: All accidents	Persons killed	Persons injured	Same Period Last Year: All accidents	Persons killed	Persons injured	Change Cumulative Death Totals
1. Ran off road				19062	368	9694	17779	379	9157	-29 %
2. Overturned on road				711	6	491	720	10	510	-40 %
3. Pedestrian				2943	186	2911	3125	166	3104	+12 %
4. Motor vehicle in traffic				120473	665	49726	117976	709	49054	-62 %
5. Parked motor vehicle				21705	25	2484	20578	23	2408	+ 9 %
6. Railroad train				722	70	389	742	98	383	-29 %
7. Bicyclist				1206	16	1245	1271	32	1322	-50 %
8. Animal				1486	3	185	1218	1	207	+200 %
9. Fixed object				12896	154	5799	11413	134	5096	+15 %
10. Other object				380	1	102	341	2	105	-50 %
11. Other non-collision				542	11	220	523	15	221	-27 %
Farm Veh.				266	14	139	200	1	112	+1300 %
Totals				182392	1519	73385	175886	1570	71679	-32 %

2B MILEAGE RATES	This Year To Date	Last Year Same Period	Percent Change
1. Motor vehicle traffic deaths	1519	1570	-32 %
2. Estimated motor vehicle mileage traveled (millions)	29,363	28351	+3.6
3. Death rate per 100,000,000 veh.-miles	5.17	5.53	-6.5 %
4. Fatal accident rate per 100,000,000 veh.-miles	4.36	4.65	-6.2 %
5. Fatal Accidents	1283	1320	-28 %
6. Persons Injured	73385	71679	+24 %

3 LOCATION	A. Trafficways Administered by Governmental Agencies (State Highway Dept., counties, cities, towns, villages, etc.): Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured	B. Trafficways Administered by Independent Agencies (Turnpike parkway, military, freeway authorities and commissions, etc.): Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured
URBAN: (All trafficways places of 2500 or more not included in FAU system) Classified by population in 1960 census: 1. 2,500 to 10,000	14889	46	3229	11614	50	1655						
2. 10,000 to 25,000	17245	50	4254	12941	60	6174						
3. 25,000 to 50,000	17002	40	3794	13168	43	5320						
4. 50,000 to 100,000	11384	25	2545	8814	25	3649						
5. 100,000 to 250,000	35094	101	8116	26877	117	11618						
6. 250,000 or more	24897	78	6418	18371	84	9186						
Under 1000	2092	19	436	1637	21	623						
1000-2500	4112	24	870	3218	27	1257						
Total urban	126745	383	29692	96670	427	42182						
RURAL: (All trafficways other than those above) 1. Controlled access highway							1198	16	317	865	22	593
2. State routes	14747	301	5257	9189	356	8716						
3. County routes	25149	244	8125	16780	281	12297						
U.S. Roads	12402	293	4540	7569	369	8005						
Interstate	2151	46	786	1319	64	1292						
Total rural *	54449	884	18708	34857	1070	30310						
Total urban and rural **	182392	1283	48717	132392	1519	73385						

* Does not include Toll Road.... ** Does include Toll Road....

5 TIME (Hour beginning)	Total: All	Fatal	Monday: All	Fatal	Tuesday: All	Fatal	Wednesday: All	Fatal	Thursday: All	Fatal	Friday: All	Fatal	Saturday: All	Fatal	Sunday: All	Fatal	Not stated: All	Fatal
Before Noon: 0. Midnight	4917	64	289	5	454	9	440	4	557	8	565	7	1298	20	1314	11		
1. 1:00	4135	60	225	3	376	5	335	7	436	5	441	9	1158	18	1164	13		
2. 2:00	3783	65	157	-	291	5	272	2	365	6	420	7	1109	25	1169	20		
3. 3:00	2168	46	127	-	180	4	163	2	209	7	231	7	640	14	618	12		
4. 4:00	1511	31	105	3	114	1	138	5	155	4	179	5	390	6	430	7		
5. 5:00	1369	28	115	1	157	2	157	1	165	10	176	4	324	7	275	3		
6. 6:00	3878	35	529	4	674	6	692	7	592	7	683	2	413	5	262	4		
7. 7:00	8002	47	1257	10	1611	6	1594	7	1342	10	1375	7	587	4	236	3		
8. 8:00	7135	36	1074	6	1326	5	1268	6	1092	6	1210	1	804	6	361	6		
9. 9:00	6211	31	915	4	970	4	867	3	833	6	884	2	1094	6	648	6		
10. 10:00	7328	42	1005	3	1074	5	937	10	917	1	979	8	1602	7	811	8		
11. 11:00	8933	36	1226	5	1225	3	1151	4	1141	4	1221	5	1966	10	1003	5		
After Noon: 12. Noon	9805	50	1297	3	1372	10	1360	4	1242	7	1499	3	1819	12	1216	11		
13. 1:00	9094	37	1235	4	1210	2	1164	3	1192	9	1304	9	1770	5	1219	5		
14. 2:00	10061	51	1317	10	1393	4	1263	8	1241	5	1540	6	1911	13	1366	5		
15. 3:00	11452	72	2064	9	2194	11	2131	13	2109	10	2182	7	2133	10	1439	12		
16. 4:00	16285	76	2474	7	2415	8	2365	15	2382	10	3024	17	2116	6	1509	13		
17. 5:00	14284	75	2073	20	2051	8	2019	11	2109	7	2691	9	1905	13	1436	7		
18. 6:00	9892	69	1243	8	1207	6	1270	10	1332	6	1873	21	1708	12	1259	6		
19. 7:00	8967	83	1048	13	1058	10	1075	6	1259	12	1823	19	1691	13	1013	10		
20. 8:00	7391	59	875	5	818	6	882	12	1114	5	1467	9	1428	13	777	9		
21. 9:00	7160	49	814	7	926	3	850	5	1078	8	1408	11	1376	12	708	3		
22. 10:00	6709	63	725	10	759	6	780	7	891	6	1530	17	1460	14	564	3		
23. 11:00	6041	77	589	9	595	4	709	14	716	8	1475	18	1535	22	422	2		
24. Not stated	2784	1	398	-	396	-	320	-	361	-	479	-	498	1	332	-		
Totals	182392	1283	23206	149	24876	133	24202	166	24830	167	30959	210	32765	274	21554	184		

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Calendar Year - 1968 Statewide All Reported Accidents

4 AGE OF CASUALTY	Number of Persons Killed: Total killed			Pedestrians			Bicyclists			Number of Persons Injured: Total Injured			Pedestrians			Bicyclists		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1 0 to 4	58	28	30	24	13	11	-	-	-	2446	1301	1145	353	231	122	13	9	4
2 5 to 9	65	34	31	38	19	19	3	1	2	3509	2026	1483	1081	684	397	408	334	74
3 10 to 14	42	29	13	9	6	3	5	3	2	3166	1688	1478	423	239	184	582	496	86
4 15 to 19	234	172	62	9	6	3	4	2	2	14367	8499	5868	257	161	96	126	112	14
5 20 to 24	211	167	44	7	6	1	1	1	-	11209	6519	4690	145	90	55	12	9	3
6 25 to 34	231	181	50	14	7	7	-	-	-	11550	6700	4850	139	94	45	6	3	3
7 35 to 44	170	126	44	11	9	2	1	1	-	8845	4693	4152	142	82	60	7	4	3
8 45 to 54	155	115	40	14	11	3	1	1	-	7346	3718	3628	147	93	54	4	2	2
9 55 to 64	137	99	38	16	12	4	-	-	-	4721	2371	2350	120	68	52	5	4	1
10 65 to 74	109	64	45	20	12	8	1	1	-	2552	1280	1272	115	73	42	4	4	-
11 75 & older	101	70	31	32	20	12	-	-	-	1029	518	511	93	58	35	5	5	-
12 Not stated	6	3	3	3	2	1	-	-	-	2645	1151	1494	95	57	38	45	41	4
Totals	1519	1088	431	197	123	74	16	10	6	73385	40464	32921	3110	1930	1180	1217	1023	194

6 DIRECTIONAL ANALYSIS – An accident consisting of a series of collisions, overturning, etc., is classified according to the first event on the road

A TWO MOTOR VEHICLE ACC.		Total	Fatal Accidents	Injury Accidents	Property Damage Acc
At Intersection	1. Entering at angle	32685	150	9683	22852
	2a. From same direction – both going straight	3123	3	568	2552
	b. Same – one turn, one straight	7310	18	1396	5896
	c. Same – one stopped	16504	1	4158	12345
	d. Same – all others	679	-	58	621
	3a. From opposite direction – both going straight	592	4	171	417
	b. Same – one left turn, one straight	5726	35	1923	3768
	c. Same – all others	442	-	41	401
	4. Not stated	-	-	-	-
	Totals	67061	211	17998	48852

B TWO MOTOR VEHICLE ACC.		Total	Fatal Accidents	Injury Accidents	Property Damage Acc
Not at Intersection	1. Going opposite direction – both moving	7625	213	2449	4963
	2. Going same direction – both moving	12679	60	2835	9784
	3a. One car parked	21813	23	2021	19769
	b. One car stopped in traffic	13899	8	4291	9600
	4a. One car entering parked position	338	-	31	307
	b. One car leaving parked position	3971	2	206	3763
	5a. One car entering alley or driveway	5715	8	1414	4293
	b. One car leaving alley or driveway	8653	10	1252	7391
	6. All others	668	2	88	578
	7. Not stated	1	-	-	1
	Totals	75362	326	14587	60449

C PEDESTRIAN ACCIDENTS	All Pedestrian Accidents	Fatal Accidents: Total	Fatal: Intersection	Fatal: Non-intersection	Non-Fatal Injury Accidents: Total	Non-Fatal: Intersection	Non-Fatal: Non-intersection
1. Car going straight	2596	171	22	149	2425	599	1826
2. Car turning right	79	3	2	1	76	70	6
3. Car turning left	208	8	8	-	200	188	12
4. Car backing	49	1	-	1	48	7	41
5. All others	11	-	-	-	11	2	9
6. Not stated	-	-	-	-	-	-	-
Totals	2943	183	32	151	2760	866	1894

D ALL OTHER ACCIDENTS			Total	Fatal Accidents	Injury Accidents	Property Damage Acc
At Intersections	Collision with	1. Non-motor vehicle – train, bicycle, etc	529	2	495	32
		2. Fixed object in road	2651	1	750	1900
	Left road	3. Overturned in road	109	-	62	47
		4. Left road	1325	5	506	814
Not at Intersections	Collision with	5. Non-motor vehicle – train, bicycle, etc	2889	73	1107	1709
		6. Fixed object in road	10249	139	3402	6708
	Left road	7. Overturned in road	603	4	318	281
		8. At curve	5611	134	2186	3291
		9. Straight road	12135	192	4290	7653
10. Fell from moving vehicle			105	10	91	4
11. All others			820	3	165	652
12. Not stated			-	-	-	-
Totals			37026	563	13372	23091

7 PEDESTRIAN ACTIONS BY AGE	Pedestrians Killed: Total	Ages of Pedestrians Killed and Injured: 0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 44	45 to 64	65 & Older	Not Stated
1a. Crossing or entering roadway – at intersection	33	724	34	206	105	63	30	75	97	105	9
b. Same – not at intersection	82	1286	209	602	150	58	36	81	75	64	11
2a. Walking in roadway – with traffic	23	100	1	6	21	25	4	14	15	11	3
b. Same – against traffic	5	66	5	9	9	15	9	4	7	7	1
3. Standing in roadway	8	79	2	4	9	7	11	21	12	9	4
4. Getting on or off other vehicle	1	41	2	6	2	3	6	10	9	2	1
5. Pushing or working on vehicle in roadway	1	36	-	1	2	6	7	10	8	1	1
6. Other working in roadway	-	13	-	-	-	3	2	3	4	-	1
7. Playing in roadway	3	76	22	37	13	3	1	-	-	-	-
8. Other in roadway	21	305	39	90	38	28	20	38	24	22	6
9. Not in roadway	3	105	5	10	20	18	9	19	13	9	2
10. Not stated	17	476	58	148	63	37	17	31	33	28	61
Totals	197	3307	377	1119	432	266	152	306	297	258	100

Drivers of vehicles in proper parking locations are excluded

8 AGE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. 15 & younger	640	8	205
2. 16	9104	41	2595
3. 17	13536	61	3919
4. 18 to 19	27781	179	7991
5. 20 to 24	48882	319	14299
6. 25 to 34	57135	424	17041
7. 35 to 44	45024	299	13278
8. 45 to 54	36950	266	10687
9. 55 to 64	24205	164	6775
10. 65 to 74	11667	97	3169
11. 75 & older	3791	58	956
12. Not stated	32292	26	2835
Totals	311007	1942	83750

9 SEX OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Male	222555	1618	59852
2. Female	77414	301	22900
3. Not stated	11038	23	998
Totals	311007	1942	83750

10 RESIDENCE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Local resident	232513	1075	62250
2. Resident elsewhere in state	44944	537	13654
3. Non-resident of state	22043	307	6785
4. Not stated	11507	23	1061
Totals	311007	1942	83750

Vehicles in proper parking locations are included

12 TYPE OF VEHICLE	All Accidents	Fatal Accidents	Injury Accidents
1. Passenger car	293925	1519	76637
2. Passenger car and trailer	260	-	50
3. Truck or truck tractor	28305	162	6732
4. Truck tractor and semi-trailer	5267	231	1408
5. Other truck combination	388	-	85
6. Farm tractor and/or farm equip.	293	13	95
7. Tow car	441	1	125
8. Bus	899	4	216
9. School bus	456	2	88
10. Motorcycle	1744	34	1360
11. Motor scooter or motor bicycle	75	-	67
12. Others and not stated	6180	16	408
Totals	338233	1982	87271
Special vehicles included above			
13. Emergency (including privately owned)	287	4	100
14. Military vehicles	1	-	-
15. Other publicly owned vehicles	231	14	53

13 ROAD SURFACE CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Dry	112308	961	32336
2. Wet	41270	255	11529
3. Snowy or icy	20767	52	3927
4. Other	515	7	144
5. Not stated	7532	8	781
Totals	182392	1283	48717

14 KIND OF LOCATION	All Accidents	Fatal Accidents	Injury Accidents
1. Built-up	131918	493	33242
2. Not built-up	40612	782	14304
3. Not stated	9862	8	1171
Totals	182392	1283	48717

15 LIGHT CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Daylight	115415	588	29912
2. Dawn or dusk	7472	51	1893
3. Darkness	57054	636	16734
4. Not stated	2451	8	178
Totals	182392	1283	48717

Contributing Circumstances (Table 11) compiled only from police reports

11 CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	Fatal Accidents	Injury Accidents
1. Speed too fast	13788	254	5494
2. Failed to yield right of way	24180	143	7608
3. Drove left of center	6930	189	2324
4. Improper overtaking	4371	34	1410
5. Passed stop sign	2059	44	871
6. Disregarded traffic signal	3429	26	1463
7. Followed too closely	10541	12	3752
8. Made improper turn	4953	16	946
9. Other improper driving	23169	111	5797
10. Inadequate brakes	1680	6	558
11. Improper lights	420	5	140
12. Had been drinking	7756	202	3139
Totals	103276	1042	33502

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* Does not include late reports.

Table 17. (Continued)

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council, Chicago — In INDIANA (State) — For Calendar Year 1969 (month or other period)

1 TYPE OF ACCIDENT

	Number of Accidents				Number of Persons			
Motor Vehicle	Total	Fatal	Non-Fatal	Property Damage	Total Killed	Injured: Total	a	b	c
1. Ran off road	19969	345	7096	12528	407	10042	4633	3163	2246
2. Overturned on road	667	6	336	325	6	444	187	177	80
3. Pedestrian	2798	178	2620	-	181	2746	991	1109	646
4. Motor vehicle in traffic	128135	575	31723	95837	734	51560	13275	13749	24536
5. Parked motor vehicle	22641	18	2071	20552	18	2531	1070	796	665
6. Railroad train	726	77	273	376	96	429	231	109	89
7. Bicyclist	1175	27	1131	17	28	1204	405	570	229
8. Animal	1733	7	199	1527	7	255	90	84	81
9. Fixed object	15227	158	1854	10215	176	6583	3295	1957	1331
10. Other object	346	1	83	262	1	104	31	39	34
11. Other non-collision	569	7	185	377	7	213	91	69	53
12. Farm Veh.	263	11	80	169	15	115	41	45	29
Totals	194249	1413	50651	142185	1676	76226	24346	21867	30019

Note: The three categories of injuries follow the manual of Uniform Definitions of Motor Vehicle Accidents.
a. Bleeding wound; distorted member, or any condition that required victim be carried from the scene.
b. Other visible injuries such as bruises, abrasions, swelling, limping, or other painful movement.
c. Complaint of pain, without visible signs of injury, or momentary unconsciousness.

SUMMARY OF All Reported ACCIDENTS

Legally reportable accidents are those involving death, bodily injury or property damage of $50.00 or more

[X] In the accident

[ ] To the property of one person

This summary includes reports and information available on March 31, 1970

REPORT PREPARED BY

Indiana State Police
100 N. Senate Ave.
Indianapolis, Indiana 46204
Robert K. Konkle, Supt.

24 COMPARATIVE TOTALS

	Same Month Last Year: All accidents	Persons killed	Persons injured	This Year to Date: All accidents	Persons killed	Persons injured	Same Period Last Year: All accidents	Persons killed	Persons injured	Change Current Year to Same Period
1. Ran off road				19969	407	10042	19062	368	9694	+11 %
2. Overturned on road				667	6	444	711	6	491	Same %
3. Pedestrian				2798	181	2745	2943	186	2911	-3 %
4. Motor vehicle in traffic				128135	734	51560	120473	665	49726	+10 %
5. Parked motor vehicle				22641	18	2531	21705	25	2484	-28 %
6. Railroad train				726	96	429	722	70	389	+37 %
7. Bicyclist				1175	28	1204	1206	16	1245	+75
8. Animal				1733	7	255	1486	3	185	+133 %
9. Fixed object				15227	176	6583	12896	154	5799	+11
10. Other object				346	1	104	380	1	102	Same %
11. Other non-collision				569	7	213	542	11	220	-36 %
12. Farm Veh.				263	15	115	266	14	139	+7 %
Totals				194249	1676	76226	182392	1519	73385	+10 %

28 MILEAGE RATES

	This Year To Date	Last Year Same Period	Percent Change
1. Motor vehicle traffic deaths	1676	1519	+10 %
2. Estimated motor vehicle mileage travelled - millions†	31902	29363	+ 9 %
3. Death rate per 100,000,000 vehicle-miles	5.25	5.17	+.08 %
4. Fatal accident rate per 100,000,000 vehicle-miles	4.4	4.4	Even %
5. Fatal Accidents	1413	1283	+10 %
6. Persons Injured	76226	73385	+4 %

3 LOCATION

	A. Trafficways Administered by Governmental Agencies (State Highway Dept., counties, cities, towns, villages, etc.): Number of Accidents Total	Fatal	Non-Fatal	Property Damage	Number of Persons Killed	Injured	B. Trafficways Administered by Independent Agencies (Turnpike, parkway, military, freeway authorities and commissions, etc.): Number of Accidents Total	Fatal	Non-Fatal	Property Damage	Number of Persons Killed	Injured
URBAN (All incorporated places of 2500 inhabitants or more, and those smaller places identified by special code boldfaced in RNG publication) 1. 2,500 to 10,000	16410	37	3402	12971	45	4811						
2. 10,000 to 25,000	18463	58	4235	14070	64	6127						
3. 25,000 to 50,000	17583	34	3845	13704	37	5354						
4. 50,000 to 100,000	12387	23	2718	9646	28	3876						
5. 100,000 to 250,000	36002	116	8078	27808	126	11699						
6. 250,000 or more	25266	66	6142	18758	78	9157						
Under 1000	2421	27	494	1900	34	740						
1000-2500	4486	16	950	3520	20	1374						
Total urban	133018	377	30264	102377	432	43238						
RURAL (All locations other than those described above) 1. Controlled access highways							1270	13	315	942	16	528
2. State routes	16165	335	5653	10177	401	9587						
3. County routes	27826	326	8710	18790	368	13151						
US Routes	12973	305	4656	8012	397	8002						
Interstate	2997	57	1053	1887	62	1720						
Total rural *	59961	1023	20072	38866	1228	32460						
Total urban and rural **	194249	1413	50651	142185	1676	76226						

* Does not include Toll Road.... ** Does include Toll Road....

5 TIME

Hour by Intervals	Total: All	Fatal	Monday: All	Fatal	Tuesday: All	Fatal	Wednesday: All	Fatal	Thursday: All	Fatal	Friday: All	Fatal	Saturday: All	Fatal	Sunday: All	Fatal	Not stated: All	Fatal
0. Midnight	5309	61	352	4	492	8	558	1	600	10	630	6	1395	21	1282	11		
1 1:00	4588	75	221	7	429	5	452	4	442	11	504	10	1196	17	1324	21		
2. 2:00	3916	77	167	3	322	4	377	4	389	9	435	13	1062	23	1164	21		
3 3:00	2703	56	121	1	235	5	250	7	260	2	289	11	761	17	807	13		
4 4:00	1785	37	114	3	140	1	170	2	175	7	216	4	494	11	476	9		
5 5:00	1690	28	167	3	181	4	203	2	229	3	216	2	368	8	326	6		
6. 6:00	4303	54	698	5	684	5	739	13	744	6	634	6	494	13	310	6		
7 7:00	8554	51	1572	10	1494	10	1614	8	1600	7	1398	6	579	6	297	4		
8. 8:00	7286	37	1271	5	1236	4	1253	4	1297	10	1163	3	781	9	285	2		
9 9:00	6211	35	899	5	896	5	874	5	881	6	839	3	1132	7	690	4		
10. 10:00	7402	32	1058	2	969	1	973	6	919	5	1133	4	1611	12	729	2		
11 11:00	9733	49	1401	9	1266	4	1245	10	1287	8	1533	9	2057	6	945	3		
12. Noon	10467	47	1503	8	1437	10	1366	6	1366	1	1726	4	1948	9	1141	9		
13. 1:00	9727	53	1410	6	1205	6	1191	7	1187	5	1575	10	1910	10	1219	9		
14. 2:00	10942	62	1580	6	1365	12	1296	4	1404	9	1611	7	2070	14	1113	10		
15 3:00	13738	82	2416	15	2241	13	2164	6	2155	11	2810	12	2277	12	1565	13		
16. 4:00	17204	72	2620	10	2332	11	2585	13	2396	9	3166	13	2216	11	1568	5		
17 5:00	14949	81	2101	17	2047	11	2202	11	2021	8	3091	10	2019	17	1468	7		
18. 6:00	10554	79	1220	8	1261	14	1392	13	1258	5	2163	15	1782	7	1406	17		
19 7:00	9384	65	1177	7	1105	7	1220	6	1111	5	1829	11	1783	18	1159	11		
20. 8:00	7900	67	910	7	943	4	970	11	932	3	1567	17	1577	15	951	8		
21 9:00	7397	70	895	7	859	11	965	12	936	10	1479	8	1154	11	809	11		
22. 10:00	7047	75	745	6	785	1	891	11	861	11	1570	15	1522	12	673	12		
23. 11:00	6535	67	631	7	625	8	778	6	784	8	1630	22	1561	14	527	2		
24 Not stated	2905	1	397	-	353	-	406	-	386	-	512	-	485	-	366	1		
Totals	194249	1413	25696	161	24991	164	26134	172	25670	171	34322	221	34533	307	22933	217		

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Standard Summary of Motor Vehicle Traffic Accidents - Indiana - Calendar Year 1969
All Reported

*** Does not include late reports.**

4 AGE OF CASUALTY	Number of Persons Killed									Number of Persons Injured								
	Total killed			Pedestrians			Bicyclists			Total injured			Pedestrians			Bicyclists		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1. 0 to 4	63	32	31	20	7	13	-	-	-	2486	1315	1171	343	227	116	14	12	2
2. 5 to 9	55	31	24	24	14	10	6	6	-	3145	1964	1481	944	587	357	428	348	80
3. 10 to 14	70	51	19	23	18	5	13	12	1	3228	1757	1471	402	249	153	533	455	78
4. 15 to 19	257	192	65	14	10	4	5	4	1	15188	9035	6153	283	174	109	112	99	13
5. 20 to 24	242	188	54	10	9	1	-	-	-	12147	7135	5012	159	95	64	9	8	1
6. 25 to 34	262	217	45	14	11	3	-	-	-	12156	7168	4988	144	97	47	13	10	3
7. 35 to 44	188	140	48	14	10	4	-	-	-	8826	4759	4067	139	87	52	7	5	2
8. 45 to 54	178	123	55	17	13	4	1	1	-	7503	3768	3735	122	65	57	6	6	-
9. 55 to 64	155	98	57	23	17	6	-	-	-	4810	2379	2431	116	63	53	4	4	-
10. 65 to 74	122	73	49	19	13	6	-	-	-	2717	1296	1421	134	66	68	7	7	-
11. 75 & older	84	49	35	20	11	9	2	2	-	1079	567	512	82	47	35	3	3	-
12. Not stated	-	-	-	-	-	-	-	-	-	2641	1077	1564	62	37	25	38	32	6
Totals	1676	1194	482	198	133	65	27	25	2	76226	42220	34006	2930	1794	1136	1174	989	185

6 DIRECTIONAL ANALYSIS – An accident consisting of a series of collisions, overturning etc., is classified according to the first event on the road

A TWO MOTOR VEHICLE ACC.		Total	Fatal Accidents	Injury Accidents	Property Damage Acc
At Intersection	1. Entering at angle	34193	198	10200	23795
	2a. From same direction – both going straight	3396	-	614	2782
	b. Same – one turn, one straight	7266	8	1390	5868
	c. Same – one stopped	17222	5	4220	13697
	d. Same – all others	802	-	65	737
	3a. From opposite direction – both going straight	623	1	207	415
	b. Same – one left turn, one straight	6508	32	2099	4377
	c. Same – all others	377	-	43	334
	4. Not stated	1	-	-	1
	Totals	71088	244	18838	52006

B TWO MOTOR VEHICLE ACC.		Total	Fatal Accidents	Injury Accidents	Property Damage Acc.
Not at Intersection	1. Going opposite direction – both moving	7691	229	2403	5059
	2. Going same direction – both moving	13789	60	3161	10568
	3a. One car parked	22709	18	2080	20611
	b. One car stopped in traffic	14533	20	4154	10359
	4a. One car entering parked position	379	-	20	359
	b. One car leaving parked position	4297	-	216	4081
	5a. One car entering alley or driveway	6397	13	1554	4830
	b. One car leaving alley or driveway	9537	7	1357	8173
	6. All others	596	4	87	505
	7. Not stated	1	-	-	1
	Totals	79929	351	15032	64546

C PEDESTRIAN ACCIDENTS		All Pedestrian Accidents	Fatal Accidents			Non-Fatal Injury Accidents		
			Total	Intersection	Non-intersection	Total	Intersection	Non-intersection
1. Car going straight		2466	171	32	139	2295	595	1700
2. Car turning right		58	1	1	-	57	53	4
3. Car turning left		224	4	4	-	220	204	16
4. Car backing		45	2	-	2	43	8	35
5. All others		5	-	-	-	5	2	3
6. Not stated		-	-	-	-	-	-	-
Totals		2798	178	37	141	2620	862	1758

O ALL OTHER ACCIDENTS		Total	Fatal Accidents	Injury Accidents	Property Damage Acc
At Intersection	Collision with 1. Non-motor vehicle, train, bicycle, etc	517	6	164	47
	Collision with 2. Fixed object in road	3001	-	857	2144
	3. Overturned in road	123	-	66	57
	4. Left road	1647	2	614	1031
Not at Intersection	Collision with 5. Non-motor vehicle, train, bicycle, etc	2366	105	1127	1134
	Collision with 6. Fixed object in road	12228	159	3997	8072
	7. Overturned in road	545	7	270	268
	Left road 8. At curve	5722	152	2203	3367
	Left road 9. Straight road	12612	198	4280	8134
10. Fell from moving vehicle		112	9	98	5
11. All others		1561	2	185	1374
12. Not stated		-	-	-	-
Totals		40434	640	14161	25633

7 PEDESTRIAN ACTIONS BY AGE	Pedestrians Killed	Ages of Pedestrians Killed and Injured								
		Total	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 44	45 to 64	65 & Older	Not Stated
1a. Crossing or entering roadway at intersection	37	726	25	203	97	67	40	75	96	116	7
b. Same – not at intersection	77	1105	211	442	171	77	28	66	59	48	3
2a. Walking in roadway – with traffic	14	87	1	6	21	24	7	13	9	5	1
b. Same – against traffic	6	50	-	7	7	12	4	5	6	8	1
3. Standing on roadway	6	62	1	4	1	8	12	22	11	3	-
4. Getting on or off other vehicle	2	34	5	4	2	5	5	6	3	4	-
5. Pushing or working on vehicle in roadway	5	30	-	1	2	3	7	8	7	2	-
6. Other working in roadway	-	19	-	-	-	1	2	7	7	-	2
7. Playing in roadway	1	49	15	25	5	3	-	1	-	-	-
8. Other in roadway	16	307	33	100	39	26	17	42	30	16	4
9. Not in roadway	13	78	2	11	14	9	11	12	10	8	1
10. Not stated	21	581	70	165	66	62	36	54	40	45	43
Totals	198	3128	363	968	425	297	169	311	278	255	62

Drivers of vehicles in proper parking locations are excluded

B AGE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. 15 & younger	692	10	222
2. 16	10601	42	2930
3. 17	15183	70	4160
4. 18 to 19	30114	197	8469
5. 20 to 24	53304	358	15256
6. 25 to 34	60485	472	17790
7. 35 to 44	45615	333	13192
8. 45 to 54	38781	275	10881
9. 55 to 64	25243	156	6883
10. 65 to 74	12550	116	3371
11. 75 & older	4127	48	1067
12. Not stated	34110	19	2898
Totals	330865	2096	87119

9 SEX OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Male	235616	1724	62114
2. Female	84343	356	24052
3. Not stated	10906	16	953
Totals	330865	2096	87119

10 RESIDENCE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Local resident	246993	1226	64721
2. Resident elsewhere in state	49013	585	14453
3. Non-resident of state	23297	269	6931
4. Not stated	11562	16	1014
Totals	330865	2096	87119

Vehicles in proper parking locations are included

12 TYPE OF VEHICLE	All Accidents	Fatal Accidents	Injury Accidents
1. Passenger car	310573	1667	79263
2. Passenger car and trailer	300	1	61
3. Truck or truck tractor	31312	192	7317
4. Truck tractor and semi-trailer	5584	201	1549
5. Other truck combination	379	2	81
6. Farm tractor and/or farm equip.	291	15	91
7. Taxicab	459	-	107
8. Bus	803	3	197
9. School bus	517	1	100
10. Motorcycle	1984	55	1552
11. Motor scooter or motor bicycle	52	-	41
12. Others and not stated	6888	16	439
Totals	359142	2153	90798
Special vehicles included above			
13. Emergency (including personally owned)	207	4	65
14. Military vehicles	9	-	2
15. Other publicly owned vehicles	225	18	41

13 ROAD SURFACE CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Dry	124783	1092	34942
2. Wet	40553	245	11013
3. Snowy or icy	19905	57	3656
4. Other	558	10	176
5. Not stated	8450	9	864
Totals	194249	1413	50651

14 KIND OF LOCATION	All Accidents	Fatal Accidents	Injury Accidents
1. Built-up	138711	525	33998
2. Not built-up	44479	874	15406
3. Not stated	11059	14	1247
Totals	194249	1413	50651

15 LIGHT CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Daylight	125272	659	31553
2. Dawn or dusk	8023	67	2044
3. Darkness	58200	674	16808
4. Not stated	2754	13	246
Totals	194249	1413	50651

Contributing Circumstances (Table 11) compiled only from police reports

11 CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	Fatal Accidents	Injury Accidents
1. Speed too fast	15359	292	5998
2. Failed to yield right of way	25234	156	7794
3. Drove left of center	7354	172	2526
4. Improper overtaking	4692	37	1523
5. Passed stop sign	2069	42	868
6. Disregarded traffic signal	3630	42	1534
7. Followed too closely	10443	8	3615
8. Made improper turn	5010	27	1004
9. Other improper driving	25098	100	6027
10. Inadequate brakes	1813	9	583
11. Improper lights	381	4	111
12. Had been drinking	7724	251	3076
Totals	108807	1140	34659

Table 17. (Continued)

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council, Chicago — In INDIANA (State) — For Calendar Year - 1970 (Month or other period) — Includes all lates.

1 TYPE OF ACCIDENT	Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Total Killed	Injured: Total	a	b	c
Motor Vehicle									
1. Ran off road	18785	308	6745	11732	355	9351	4168	3093	2090
2. Overturned on road	755	4	389	362	8	520	221	203	96
Collision of Motor vehicle with: 3. Pedestrian	2891	177	2714	-	183	2842	1035	1119	688
4. Motor vehicle in traffic	134764	547	31796	102421	679	51387	12753	14310	24324
5. Parked motor vehicle	24113	9	1957	22177	11	2435	988	743	704
6. Railroad train	754	70	302	382	94	445	245	102	98
7. Bicyclist	1339	25	1308	6	26	1405	457	678	270
8. Animal	1877	2	214	1661	2	285	85	119	81
9. Fixed object	16311	159	5085	11067	173	6851	3247	2198	1406
10. Other object	335	2	51	282	2	55	25	20	10
11. Other non-collision	616	19	200	397	19	226	105	78	43
12. Farm Veh.	310	10	83	217	11	129	53	46	30
Totals	202880	1332	50844	150704	1563	75931	23382	22709	29840

Note The three categories of injuries follow the Manual of Uniform Definitions of Motor Vehicle Accidents.

a Bleeding wound, distorted member or any condition that required victim be carried from the scene

b Other visible injuries such as bruises, abrasions, swelling, limping, or other painful movement.

c. Complaint of pain, without visible signs of injury, or momentary unconsciousness.

SUMMARY OF All Reported ACCIDENTS

Legally reportable accidents are those involving death, bodily injury or property damage of

$ 50.00 or more

☒ In the accident

☐ To the property of one person

This summary includes reports and information available on

April 21, 1971

REPORT PREPARED BY

Indiana State Police
100 North Senate Ave.
Indianapolis, Indiana 46204
Robert K. Konkle, Supt.

2A COMPARATIVE TOTALS	Same Month Last Year: All accidents	Persons killed	Persons injured	This Year to Date: All accidents	Persons killed	Persons injured	Same Period Last Year: All accidents	Persons killed	Persons injured	Change Cumulative Death Record
1. Ran off road				18785	355	9351	20888	407	10393	-13 %
2. Overturned on road				755	8	520	696	6	457	+34 %
Collision of Motor vehicle with: 3. Pedestrian				2891	183	2842	2959	181	2915	+2 %
4. Motor vehicle in traffic				134764	679	51387	134328	734	52350	-7 %
5. Parked motor vehicle				24113	11	2435	24830	18	2576	-38 %
6. Railroad train				754	94	445	757	96	450	-2 %
7. Bicyclist				1339	26	1405	1225	28	1253	-7 %
8. Animal				1877	2	285	1785	7	258	-71 %
9. Fixed object				16311	173	6851	16273	176	6861	-1 %
10. Other object				335	2	55	378	1	108	+100 %
11. Other non-collision				616	19	226	615	7	232	+172 %
12. Farm Veh.				310	11	129	272	15	117	-26 %
Totals				202880	1563	75931	205006	1676	77970	-7 %

2B MILEAGE RATES	This Year To Date	Last Year Same Period	Percent Change
1. Motor vehicle traffic deaths	1563	1676	-7 %
2. Estimated motor vehicle mileage traveled (millions)	32.58	31.90	+3 %
3. Death rate per 100,000,000 vehicle-miles	4.8	5.3	-.5 %
4. Fatal accident rate per 100,000,000 vehicle-miles	4.1	4.4	-.3 %
5. Fatal Accidents	1332	1413	-6 %
6. Persons Injured	75931	77970	-3 %

3. LOCATION	A. Trafficways Administered by Governmental Agencies: State Highway Dept., counties, cities, towns, villages, etc. — Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured	B. Trafficways Administered by Independent Agencies: Turnpike, parkway, military, freeway authorities and commissions, etc. — Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured
URBAN: All incorporated places of 2500 or more people and all areas classified as urban by the official census agencies involved												
1. 2,500 to 10,000	17777	57	3645	14075	67	5185						
2. 10,000 to 25,000	19401	46	4232	15123	51	6045						
3. 25,000 to 50,000	18690	40	3970	14680	41	5575						
4. 50,000 to 100,000	12745	30	2641	10074	32	3758						
5. 100,000 to 250,000	37338	114	8210	29014	126	11858						
6. 250,000 or more	27345	63	6520	20762	65	9072						
Under 1000	2678	19	536	2123	22	819						
1000-2500	4685	34	917	3734	36	1329						
Total urban	140659	403	30671	109585	440	43641						
RURAL: All locations other than those above							1276	9	328	939	11	610
1. Controlled access highway												
2. State routes	16306	311	5562	10433	380	9231						
3. County routes	28696	278	8735	19683	318	13015						
U.S. Routes	12630	272	4426	7932	346	7625						
Interstate	3313	59	1122	2132	68	1779						
Total rural *	60945	920	19845	40180	1112	31680						
Total urban and rural *-**	202880	1332	50844	150704	1563	75931						

* Does not include Toll Road.... ** Does include Toll Road....

5. TIME — Hour beginning	Total: All	Fatal	Monday: All	Fatal	Tuesday: All	Fatal	Wednesday: All	Fatal	Thursday: All	Fatal	Friday: All	Fatal	Saturday: All	Fatal	Sunday: All	Fatal	Not stated: All	Fatal
Before Noon: 0. Midnight	5296	59	329	3	494	4	495	5	662	10	721	6	1321	17	1274	14		
1. 1:00	4502	54	215	1	372	4	403	3	539	9	511	6	1196	18	1266	13		
2. 2:00	3867	72	177	3	313	5	318	9	423	8	417	10	1135	18	1084	19		
3. 3:00	2709	54	123	2	214	5	209	3	292	5	302	7	758	18	811	11		
4. 4:00	1758	32	88	-	150	2	141	2	194	4	233	4	479	10	473	10		
5. 5:00	1540	21	154	1	181	4	157	1	202	3	242	3	301	6	303	3		
6. 6:00	3897	35	660	3	688	8	539	5	673	6	678	4	396	6	263	3		
7. 7:00	8476	34	1744	6	1606	6	1336	6	1407	4	1552	4	535	4	296	4		
8. 8:00	7720	37	1462	9	1426	7	1175	6	1303	1	1276	6	703	4	375	4		
9. 9:00	6568	38	1023	4	963	1	835	4	938	7	1068	7	1045	13	696	2		
10. 10:00	7900	31	1202	5	1067	4	989	7	1094	2	1224	3	1617	3	707	7		
11. 11:00	10418	38	1594	11	1352	2	1348	2	1415	5	1657	11	2095	5	957	2		
After Noon: 12. Noon	11196	64	1680	14	1480	6	1453	11	1469	8	1915	11	2031	8	1168	6		
13. 1:00	10897	61	1692	7	1428	5	1291	6	1465	8	1799	13	2034	13	1271	9		
14. 2:00	11525	61	1736	7	1409	5	1416	8	1634	7	1873	11	2108	13	1349	10		
15. 3:00	16585	66	2690	15	2396	8	2368	6	2440	7	2957	13	2273	10	1461	7		
16. 4:00	17658	70	2818	17	2527	12	2576	4	2701	7	3224	7	2231	18	1581	5		
17. 5:00	15289	72	2516	9	2055	13	2093	7	2292	15	2314	13	1945	7	1474	8		
18. 6:00	10944	71	1494	8	1310	12	1427	9	1471	12	2068	14	1667	7	1307	9		
19. 7:00	9258	78	1285	7	1140	11	1214	4	1375	12	1979	22	1812	15	1153	7		
20. 8:00	8190	86	1080	11	926	7	973	13	1143	13	1565	18	1571	11	932	13		
21. 9:00	7703	66	953	13	893	6	967	2	1088	14	1528	12	1467	10	807	9		
22. 10:00	7343	63	779	8	831	5	891	4	1039	9	1564	24	1560	9	679	4		
23. 11:00	6972	67	702	11	689	5	751	4	908	9	1694	13	1736	21	492	4		
24. Not stated	3969	2	571	-	545	-	483	-	554	-	735	-	651	2	430	-		
Totals	202880	1332	28684	175	26455	147	25848	131	28721	185	35696	242	34867	266	22609	169		

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Stock No. 331.33-1

Standard Summary of Motor Vehicle Traffic Accidents - Calendar Year 1970 Includes all late reports.

4 AGE OF CASUALTY	Number of Persons Killed: Total killed			Pedestrians			Bicyclists			Number of Persons Injured: Total injured			Pedestrians			Bicyclists		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1 0 to 4	47	26	21	20	14	6	-	-	-	2507	1341	1166	358	227	131	15	12	3
2 5 to 9	61	37	24	33	19	14	7	5	2	3554	2010	1544	933	584	349	446	360	86
3 10 to 14	56	35	21	11	9	2	12	7	5	3474	1908	1566	412	260	152	626	496	130
4 15 to 19	277	209	68	16	11	5	6	6	-	14938	8622	6316	340	201	139	143	118	25
5 20 to 24	211	166	45	10	6	4	-	-	-	12382	7152	5230	151	96	55	29	25	4
6 25 to 34	225	178	47	11	9	2	-	-	-	12011	6931	5080	158	96	62	8	7	1
7 35 to 44	160	114	46	12	9	3	-	-	-	8444	4543	3901	123	65	58	5	3	2
8 45 to 54	150	98	52	12	8	4	1	1	-	7356	3708	3648	149	95	54	8	7	1
9 55 to 64	157	102	55	19	16	3	-	-	-	4948	2480	2468	134	82	52	5	5	-
10 65 to 74	116	62	54	20	14	6	-	-	-	2612	1215	1397	112	59	53	6	6	-
11 75 & older	97	58	39	28	23	5	-	-	-	1122	576	546	73	41	32	3	3	-
12 Not stated	6	3	3	1	1	-	-	-	-	2583	1112	1471	86	62	24	53	50	3
Totals	1563	1088	475	193	139	54	26	19	7	75931	41598	34333	3029	1868	1161	1347	1092	255

6 DIRECTIONAL ANALYSIS An accident consisting of a series of collisions, overturning, etc, is classified according to the first event on the road

A TWO MOTOR VEHICLE ACC.	Total	Fatal Accidents	Injury Accidents	Property Damage Acc
At Intersections: 1. Entering at angle	35135	193	10189	24753
2a. From same direction – both going straight	3519	3	544	2972
b. Some – one turn, one straight	8110	16	1484	6610
c. Some – one stopped	19588	6	4195	15387
d. Some – all others	845	-	55	790
3a. From opposite direction – both going straight	661	1	197	463
b. Some – one left turn, one straight	6552	30	2080	4442
c. Some – all others	343	-	44	299
4. Not stated	-	-	-	-
Totals	74753	249	18788	55716

B TWO MOTOR VEHICLE ACC.	Total	Fatal Accidents	Injury Accidents	Property Damage Acc
Not at Intersections: 1. Going opposite direction – both moving	8089	209	2441	5439
2. Going same direction – both moving	14047	62	3036	10949
3a. One car parked	24252	9	1967	22276
b. One car stopped in traffic	15280	11	4211	11058
4a. One car entering parked position	415	-	14	401
b. One car leaving parked position	4406	-	186	4220
5a. One car entering alley or driveway	7097	9	1705	5383
b. One car leaving alley or driveway	10113	7	1392	8714
6. All others	719	6	90	623
7. Not stated	2	-	1	1
Totals	84450	313	15043	69094

C PEDESTRIAN ACCIDENTS	All Pedestrian Accidents	Fatal Accidents: Total	Fatal Accidents: Intersection	Fatal Accidents: Non-intersection	Non-Fatal Injury Accidents: Total	Non-Fatal Injury Accidents: Intersection	Non-Fatal Injury Accidents: Non-intersection
1. Car going straight	2506	166	24	142	2340	582	1758
2. Car turning right	92	-	-	-	92	86	6
3. Car turning left	220	10	9	1	210	191	19
4. Car backing	61	1	-	1	60	8	52
5. All others	11	-	-	-	11	1	10
6. Not stated	1	-	-	-	1	1	-
Totals	2891	177	33	144	2714	869	1845

D ALL OTHER ACCIDENTS			Total	Fatal Accidents	Injury Accidents	Property Damage Acc.
At Intersections	Collision with	1. Non-motor vehicle – train, bicycle, etc.	540	4	425	41
		2. Fixed object in road	3189	1	932	2256
		3. Overturned in road	69	1	67	1
		4. Left road	1410	-	521	889
Not at Intersections	Collision with	5. Non-motor vehicle – train, bicycle, etc.	2539	93	1293	1153
		6. Fixed object in road	13125	158	4153	8814
		7. Overturned in road	628	4	323	301
	Left road	8. At curve	5362	142	2130	3090
		9. Straight road	12019	168	4096	7755
10. Fell from moving vehicle			146	18	122	6
11. All others			1699	4	167	1528
12. Not stated			-	-	-	-
Totals			40726	593	14299	25834

7 PEDESTRIAN ACTIONS BY AGE	Pedestrians Killed: Total	Ages of Pedestrians Killed and Injured: 0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 44	45 to 64	65 & Older	Not Stated
1a. Crossing or entering roadway at intersection	31	686	28	186	87	68	30	69	113	99	6
b. Some – not at intersection	72	1098	212	454	151	78	26	53	68	47	9
2a. Walking in roadway – with traffic	23	124	1	4	18	52	12	14	14	8	1
b. Some – against traffic	11	49	1	4	7	13	1	8	5	10	-
3. Standing in roadway	12	77	1	4	3	9	16	19	16	6	3
4. Getting on or off other vehicle	-	34	-	4	4	3	5	11	4	1	2
5. Pushing or working on vehicle in roadway	3	30	-	-	1	5	4	12	5	1	2
6. Other working in roadway	-	19	-	-	-	1	5	6	6	1	-
7. Playing in roadway	2	67	12	35	15	5	-	-	-	-	-
8. Other in roadway	17	299	37	77	51	29	23	40	23	14	5
9. Not in roadway	7	100	7	11	8	21	7	22	14	9	1
10. Not stated	15	639	79	187	78	72	32	50	46	37	58
Totals	193	3222	378	966	423	356	161	304	314	233	87

Drivers of vehicles in proper parking locations are excluded

8 AGE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. 15 & younger	763	10	286
2. 16	10948	57	2900
3. 17	15423	77	4056
4. 18 to 19	30434	173	8375
5. 20 to 24	56156	360	15711
6. 25 to 34	62801	417	17757
7. 35 to 44	46649	281	12826
8. 45 to 54	39611	268	10806
9. 55 to 64	26600	188	7019
10. 65 to 74	13180	103	3358
11. 75 & older	4637	50	1172
12. Not stated	38754	23	2985
Totals	345956	2007	87251

9 SEX OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Male	242532	1641	61375
2. Female	91646	347	24837
3. Not stated	11778	19	1039
Totals	345956	2007	87251

10 RESIDENCE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1. Local resident	258728	1175	64889
2. Resident elsewhere in state	51256	528	14508
3. Non-resident of state	23109	285	6725
4. Not stated	12863	19	1129
Totals	345956	2007	87251

Vehicles in proper parking locations are included

12 TYPE OF VEHICLE	All Accidents	Fatal Accidents	Injury Accidents
1. Passenger car	322261	1549	78317
2. Passenger car and trailer	309	-	60
3. Truck or truck tractor	34090	215	7762
4. Truck tractor and semi-trailer	5706	183	1538
5. Other truck combination	354	-	64
6. Farm tractor and/or farm equip.	331	13	92
7. Trucross	437	1	106
8. Bus	859	5	193
9. School bus	558	1	113
10. Motorcycle	2386	58	1834
11. Motor scooter or motor bicycle	99	1	79
12. Others and not stated	8306	13	565
Totals	375696	2039	90723
Special vehicles included above			
13. Emergency (including privately owned)	255	-	81
14. Military vehicles	15	-	5
15. Other publicly owned vehicles	230	32	52

13. ROAD SURFACE CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Dry	126157	1046	34322
2. Wet	43388	225	11486
3. Snowy or icy	22997	47	3951
4. Other	576	8	154
5. Not stated	9762	6	931
Totals	202880	1332	50844

14 KIND OF LOCATION	All Accidents	Fatal Accidents	Injury Accidents
1. Built-up	161499	537	34536
2. Not built-up	41344	787	15078
3. Not stated	12037	8	1230
Totals	202880	1332	50844

15 LIGHT CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1. Daylight	130628	635	31814
2. Dawn or dusk	7929	56	1974
3. Darkness	58751	634	16545
4. Not stated	5572	7	511
Totals	202880	1332	50844

Contributing Circumstances (Table 11) compiled only from police reports.

11 CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	Fatal Accidents	Injury Accidents
1. Speed too fast	14235	253	5611
2. Failed to yield right of way	26027	174	7969
3. Drove left of center	7560	178	2516
4. Improper overtaking	4726	30	1413
5. Passed stop sign	2239	31	950
6. Disregarded traffic signal	3672	33	1588
7. Followed too closely	10631	5	3537
8. Made improper turn	5089	24	1047
9. Other improper driving	27003	106	6525
10. Inadequate brakes	1845	6	607
11. Improper lights	419	1	136
12. Had been drinking	7881	226	3119
Totals	111327	1067	35018

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Stock No. 72-2112

Table 17. (Continued)

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council, Chicago — In INDIANA (State) For Calendar Year 1971 (Month or other period) — Includes all Latee

1 TYPE OF ACCIDENT (Collision of Motor vehicle with)	Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Total Killed	Injured: Total	a	b	c
Motor Vehicle									
1 Ran off road	16735	334	6133	10268	377	8473	3680	2933	1860
2 Overturned on road	929	4	488	437	4	641	246	242	153
3 Pedestrian	2840	181	2659	-	182	2786	969	1068	749
4 Motor vehicle in traffic	127521	566	30896	96059	743	48471	12010	13356	23105
5 Parked motor vehicle	22068	15	1913	20140	15	2301	886	753	662
6 Railroad train	721	80	300	341	103	437	214	132	91
7 Bicyclist	1347	27	1312	8	27	1437	440	627	370
8 Animal	1999	-	229	1770	-	284	97	106	81
9 Fixed object	18944	127	6053	12764	141	8029	3791	2653	1585
10 Other object	427	-	80	347	-	94	38	35	21
11 Other non-collision	814	8	212	594	8	243	111	80	52
12 **Farm Veh.**	262	11	95	156	11	141	53	49	39
Totals	194607	1353	50370	142884	1611	73337	22535	22034	28768

Note: The three categories of injuries follow the Manual of Uniform Definitions of Motor Vehicle Accidents.
a. Bleeding wound, distorted member or any condition that required victim be carried from the scene.
b. Other visible injuries such as bruises, abrasions, swelling limping or other painful movement
c. Complaint of pain, without visible signs of injury, or momentary unconsciousness

SUMMARY OF **All Reported** ACCIDENTS

Legally reportable accidents are those involving death, bodily injury or property damage of

$ 50.00 or more

[X] In the accident

[ ] To the property of one person

This summary includes reports and information available on

May 11, 1972

REPORT PREPARED BY

Indiana State Police
100 N. Senate Avenue
Indianapolis, Indiana 46204
Robert K. Konkle, Supt.

2A COMPARATIVE TOTALS (Collision of Motor vehicle with)	Same Month Last Year: All accidents	Persons killed	Persons injured	This Year to Date: All accidents	Persons killed	Persons injured	Same Period Last Year: All accidents	Persons killed	Persons injured	Change Cumulative Death Record
1 Ran off road				16735	337	8473	16785	355	9351	+ 6%
2 Overturned on road				929	4	641	755	8	520	- 50%
3 Pedestrian				2840	182	2786	2801	183	2842	- 1%
4 Motor vehicle in traffic				127521	743	48471	134764	679	51367	+ 9%
5 Parked motor vehicle				22068	15	2301	24143	11	2435	+ 36%
6 Railroad train				721	103	437	754	94	445	+ 10%
7 Bicyclist				1347	27	1437	1339	26	1405	+ 4%
8 Animal				1999	-	284	1877	2	285	-200%
9 Fixed object				18944	141	8029	16311	173	6851	- 19%
10 Other object				427	-	94	335	2	55	-200%
11 Other non-collision				814	8	243	616	19	226	- 52%
12 **Farm Veh.**				262	11	141	310	11	129	same%
Totals				194607	1611	73337	202880	1563	75931	+ 3%

2B MILEAGE RATES	This Year To Date	Last Year Same Period	Percent Change
1 Motor vehicle traffic deaths	1611	1563	+ 3
2 Estimated motor vehicle mileage traveled (millions)	35.43	32.58	+8.8
3 Death rate per 100 000 000 vehicle-miles	4.5	4.8	- .3
4 Fatal accident rate per 100 000 000 vehicle-miles	3.8	4.1	- .3
5 Fatal Accidents	1353	1332	+1.6
6 Persons Injured	73337	75931	-3.5

3 LOCATION	Number of Accidents: Total	Fatal	Non-Fatal	Property Damage	Number of Persons: Killed	Injured	Total
URBAN: All incapacitating effects of 1000 or more people and all cases classified as urban by specialized officers in rural areas							
1 2 500 to 10,000	17284	58	3718	13508	67	5167	
2 10,000 to 25,000	18060	51	4120	13889	55	5750	
3 25,000 to 50,000	18108	37	3859	14212	44	5273	
4 50,000 to 100,000	12325	22	2720	9583	23	3674	
5 100,000 to 250,000	34593	109	7741	26743	116	10903	
6 250,000 or more	25037	49	6104	18884	51	8235	
7 **Under 1000**	2452	21	490	1941	23	703	
8 1000-2500	4554	26	957	3571	29	1368	
Total urban	132413	373	29709	102331	408	41073	
RURAL: All injuries other than those above							1226
1 Controlled access highway							
2 State routes	16292	321	5676	10295	395	9154	
3 County routes	28492	296	8960	19236	333	13002	
4 **U.S. Routes**	12163	282	4409	7472	357	7468	
5 **Interstate**	4021	67	1288	2666	97	2039	
Total rural *	60968	966	20333	39699	1182	31663	
Total urban and rural **	194607	1353	50370	142884	1611	73337	

	Fatal	Non-Fatal	Property Damage	Killed	Injured
6. Traffic ways Administered by Governmental Agencies (State Highway Dept., counties, cities, towns, villages etc.)	14	328	884	21	601
8. Traffic ways Administered by Non-governmental Agencies (Turnpike, parkway, company roads, subways etc. and other areas not)					

5 TIME (Hour beginning)	Total: All	Fatal	Monday: All	Fatal	Tuesday: All	Fatal	Wednesday: All	Fatal	Thursday: All	Fatal	Friday: All	Fatal	Saturday: All	Fatal	Sunday: All	Fatal	Not stated: All	Fatal
Before Noon 0. Midnight	6039	57	313	1	500	5	529	6	543	7	726	8	1355	15	1073	15		
1. 1:00	4068	48	229	4	347	2	360	3	411	4	523	13	1126	8	1072	14		
2. 2:00	3701	75	144	2	302	9	305	5	405	8	478	6	1071	23	996	22		
3. 3:00	2555	49	104	-	203	6	215	1	268	7	342	5	723	18	700	12		
4. 4:00	1594	34	114	2	149	6	149	1	136	1	198	4	422	9	406	11		
5. 5:00	1624	30	197	1	150	4	197	3	224	4	235	2	351	10	270	6		
6. 6:00	4018	40	648	6	662	5	769	4	686	13	634	6	370	5	242	1		
7. 7:00	8237	47	1478	7	1544	8	1602	10	1496	9	1388	5	465	5	264	3		
8. 8:00	7399	36	1310	6	1330	6	1344	7	1243	3	1100	8	743	3	329	3		
9. 9:00	6340	37	1009	8	881	4	904	2	809	4	977	5	1080	5	680	9		
10. 10:00	7936	26	1102	6	1080	3	1006	4	1055	3	1223	4	1654	5	816	1		
11. 11:00	9898	46	1217	7	1328	4	1295	4	1376	9	1669	6	2068	13	945	3		
After Noon 12. Noon	10642	51	1406	7	1432	6	1451	14	1446	7	1901	10	1916	5	1090	2		
13. 1:00	10142	40	1420	3	1293	2	1256	4	1289	6	1787	8	1920	13	1177	4		
14. 2:00	11148	57	1591	8	1416	5	1410	4	1436	10	1977	14	1985	10	1333	6		
15. 3:00	16072	76	2288	7	2389	12	2301	14	2321	8	3183	18	2186	9	1404	8		
16. 4:00	16932	75	2476	9	2415	12	2406	7	2540	9	3384	13	2220	13	1491	12		
17. 5:00	14685	83	1937	10	2070	7	2038	11	2138	13	3042	15	1886	12	1464	15		
18. 6:00	10572	85	1325	9	1302	10	1246	8	1371	7	2209	25	1720	14	1339	12		
19. 7:00	9384	67	1153	9	1057	5	1144	12	1182	8	2038	12	1715	14	1095	7		
20. 8:00	7824	79	899	9	888	10	964	11	1067	12	1693	13	1422	21	891	3		
21. 9:00	7582	63	876	6	883	5	975	9	982	9	1643	17	1339	11	884	6		
22. 10:00	6981	63	737	10	805	7	840	6	821	5	1714	14	1407	20	657	1		
23. 11:00	6487	85	586	9	705	8	759	8	787	12	1686	20	1419	21	545	7		
24. Not stated	3747	4	539	1	464	-	505	-	521	-	672	1	628	2	418	-		
Totals	194607	1353	25158	142	25602	151	25970	158	26573	178	36472	252	33191	284	21641	183		

Form 1-(Rev. 11 1958) (Page 1) 2M96609 Printed in U. S. A. Stock No. 321 33-

Calendar Year - 1971 Includes All Lates

Indiana Standard Summary of Motor Vehicle Traffic Accidents All Reported

4 AGE OF CASUALTY	Number of Persons Killed: Total killed			Pedestrians			Bicyclists			Total Injured			Number of Persons Injured: Pedestrians			Bicyclists		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1 0 to 4	48	24	24	16	13	3	-	-	-	2496	1340	1156	374	250	124	11	10	1
2 5 to 9	70	37	33	40	26	14	9	4	5	3263	1791	1472	900	549	351	428	326	102
3 10 to 14	65	35	30	16	5	11	10	9	1	3329	1811	1518	435	253	182	582	486	96
4 15 to 19	248	187	61	14	13	1	5	5	-	14344	8261	6083	274	170	104	166	138	28
5 20 to 24	217	168	49	4	4	-	-	-	-	12197	7104	5093	150	89	61	36	28	8
6 25 to 34	244	191	53	10	8	2	-	-	-	11877	6959	4318	143	89	54	19	11	8
7 35 to 44	189	142	47	16	11	5	1	1	-	7857	4187	3670	136	87	49	8	7	1
8 45 to 54	187	144	43	24	19	5	1	-	1	6992	3519	3473	141	86	55	5	4	1
9 55 to 64	141	95	46	18	17	1	-	-	-	4693	2389	2304	144	75	69	3	3	-
10 65 to 74	120	75	45	20	17	3	1	1	-	2601	1182	1419	106	55	51	3	3	-
11 75 & older	80	51	29	16	11	5	-	-	-	1162	582	580	73	47	26	7	7	-
12 Not stated	2	1	1	-	-	-	-	-	-	2526	1062	1464	114	82	32	68	55	13
Totals	1611	1130	481	194	144	50	27	20	7	73337	40187	33150	2990	1832	1158	1336	1078	258

6 DIRECTIONAL ANALYSIS An accident consisting of a series of collisions, overturning etc., is classified according to the first event on the road

A TWO MOTOR VEHICLE ACC.	Total	Fatal Accidents	Injury Accidents	Property Damage Acc
1 Entering at angle	32686	179	9682	22825
2a From same direction - both going straight	3384	-	518	2866
Some - one turn one straight	6112	13	1705	6394
c Some - one stopped	17213	12	3711	13490
3 Some - all others	1183	1	89	1093
3a From opposite direction - both going straight	561	1	164	396
b Some - one left turn one straight	6612	29	2238	4345
Some - all others	289	-	24	265
4 Not stated	2	-	1	1
Totals	70042	235	18132	51675

B TWO MOTOR VEHICLE ACC.	Total	Fatal Accidents	Injury Accidents	Property Damage Acc
1 Going opposite direction - both moving	7134	227	2257	4650
2 Going same direction - both moving	14133	68	3071	10994
3a One car parked	22114	17	1918	20179
b One car stopped in traffic	13746	11	3811	9924
c One car entering parked position	399	-	21	378
d One car leaving parked position	4148	-	195	3953
3e One car entering alley or driveway	7472	16	1981	5475
f One car leaving alley or driveway	9820	13	1446	8361
4 All others	827	1	66	760
5 Not stated	1	-	-	1
Totals	79794	353	14766	64675

C PEDESTRIAN ACCIDENTS	All Pedestrian Accidents	Fatal Accidents: Total	Fatal: Intersection	Fatal: Non-intersection	Non-Fatal Injury Accidents: Total	Non-Fatal: Intersection	Non-Fatal: Non-intersection
1 Car going straight	2518	177	21	156	2341	574	1767
2 Car turning right	51	1	1	-	50	43	7
3 Car turning left	204	-	-	-	204	193	11
4 Car backing	56	3	-	3	53	7	46
5 All others	11	-	-	-	11	-	11
6 Not stated	-	-	-	-	-	-	-
Totals	2840	181	22	159	2659	817	1842

D ALL OTHER ACCIDENTS		Total	Fatal Accidents	Injury Accidents	Property Damage Acc
At Intersections	Collision with: 1 Non motor vehicle train, bicycle etc	580	3	542	35
	2 Fixed object in road	3246	-	893	2353
	3 Overturned in road	129	-	69	60
	4 Left road	886	2	351	533
Not at Intersections	Collision with: 5 Non-motor vehicle train, bicycle etc	2595	104	1276	1215
	6 Fixed object in road	15701	127	5161	10413
	7 Overturned in road	801	4	419	378
	Left road: 8 At curve	4706	133	1912	2661
	9 Straight road	11150	201	3874	7075
10 Fell from moving vehicle		110	8	98	4
11 All others		2027	2	218	1807
12 Not stated					
Totals		41931	584	14813	26534

7 PEDESTRIAN ACTIONS BY AGE	Pedestrians Killed	Ages of Pedestrians Killed and Injured: Total	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 44	45 to 64	65 & Older	Not Stated
1a Crossing or entering roadway at intersection	27	571	26	153	79	34	34	58	100	75	12
b Some - not at intersection	74	1059	208	439	150	56	22	56	74	45	9
2a Walking in roadway - with traffic	28	114	2	6	18	41	5	20	15	6	1
b Some - against traffic	4	46	4	8	7	8	4	2	7	6	-
3 Standing in roadway	11	78	3	8	5	15	6	25	11	5	-
4 Getting on or off other vehicle	3	36	2	5	2	6	4	9	6	2	-
5 Pushing or working on vehicle in roadway	-	36	-	3	-	7	8	13	5	-	-
6 Other working in roadway	1	11	-	-	1	2	-	3	4	1	-
7 Playing in roadway	8	86	31	33	12	8	1	-	-	-	1
8 Other in roadway	20	337	34	101	62	25	21	36	22	25	11
9 Not in roadway	4	85	3	8	17	15	8	15	14	5	-
10 Not stated	14	725	77	176	98	71	41	68	69	45	80
Totals	194	3184	390	940	451	288	154	305	327	215	114

Drivers of vehicles in proper parking locations are excluded

8 AGE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1 15 & younger	767	6	305
2 16	10844	64	2849
3 17	14832	70	4044
4 18 to 19	29170	171	8103
5 20 to 24	54764	324	15771
6 25 to 34	60338	482	17365
7 35 to 44	43129	329	12221
8 45 to 54	37870	260	10520
9 55 to 64	25224	162	6740
10 65 to 74	12466	102	3373
11 75 & older	4633	57	1220
12 Not stated	35448	26	2828
Totals	329485	2053	85479

9 SEX OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1 Male	227699	1676	57416
2 Female	90797	355	25114
3 Not stated	10989	22	949
Totals	329485	2053	85479

10 RESIDENCE OF DRIVER	All Accidents	Fatal Accidents	Injury Accidents
1 Local resident	244761	1179	63450
2 Resident elsewhere in state	50135	554	14461
3 Non-resident of state	22651	296	6550
4 Not stated	11938	24	1018
Totals	329485	2053	85479

Vehicles in proper parking locations are included

12 TYPE OF VEHICLE	All Accidents	Fatal Accidents	Injury Accidents
1 Passenger car	303983	1584	75824
2 Passenger car and trailer	267	1	54
3 Truck or truck tractor	33811	263	8051
4 Truck tractor and semi-trailer	5872	167	1608
5 Other truck combination	372	1	79
6 Farm tractor and or farm equip	348	12	124
7 Tow cab	371	-	74
8 Bus	775	4	166
9 School bus	545	4	112
10 Motorcycle	2905	56	2219
11 Motor scooter or motor bicycle	93	1	76
12 Others and not stated	7873	16	521
Totals	357215	2109	88908
Special vehicles included above			
13 Emergency (including privately owned)	243	4	67
14 Military vehicles	29	-	3
15 Other publicly owned vehicles	243	38	33

13 ROAD SURFACE CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1 Dry	128724	1067	35721
2 Wet	37013	206	9841
3 Snowy or icy	18302	62	3664
4 Other	668	11	184
5 Not stated	9400	7	910
Totals	134607	1353	50370

14 KIND OF LOCATION	All Accidents	Fatal Accidents	Injury Accidents
1 Business	138480	504	33783
2 Not built up	44555	840	15329
3 Not stated	11572	9	1258
Totals	194607	1353	50370

15 LIGHT CONDITION	All Accidents	Fatal Accidents	Injury Accidents
1 Daylight	121653	622	30705
2 Dawn or dusk	7760	65	2045
3 Darkness	57526	661	16856
4 Not stated	7668	5	764
Totals	194607	1353	50370

Contributing Circumstances (Table 11) compiled only from police reports

11 CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	Fatal Accidents	Injury Accidents
1 Speed too fast	13464	266	5219
2 Failed to yield right of way	25213	179	7774
3 Drove left of center	7075	167	2382
4 Improper overtaking	4836	28	1453
5 Passed stop sign	2126	21	921
6 Disregarded traffic signal	3544	34	1506
7 Followed too closely	10338	9	3449
8 Made improper turn	5638	19	1204
9 Other improper driving	28072	111	6937
10 Inadequate brakes	1966	1	643
11 Improper lights	377	7	120
12 Had been drinking	7848	243	3221
Totals	110497	1085	34829

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Appendix B

Driving Regulations

This Appendix includes excerpts from the Indiana Driver's Manual defining chauffeur's and public passenger chauffeur's licenses. The violation point system is also explained in this Appendix.

CHAUFFEURS AND PUBLIC PASSENGER CHAUFFEURS

Every person who is employed for hire by another for the principal purpose of operating a motor vehicle, and every person who drives any motor vehicle upon a public highway, when in use for the transportation of property, for hire, must have a Chauffeur's License.

The applicant for a chauffeur's license must be eighteen (18) years of age with one (1) year's licensed driving experience. He must pass the vision test and written examination every four (4) years.

Every person who operates a motor vehicle while in use as a school bus for the transportation of pupils to or from school, or to or from school athletic games or contests, or any person who operates a motor vehicle while in use as a public passenger-carrying vehicle must have a Public Passenger Chauffeur's License.

The applicant for a public passenger chauffeur's license must be twenty-one (21) years of age, except that a public passenger chauffeur's license may be issued to any person eighteen (18) years of age or older for the purpose of driving a taxi cab only. The applicant must have two (2) years' licensed driving experience and must be physically and mentally fit. He must pass the vision test and written examination and submit a medical examination report each year. The report forms are available at any license branch.

A chauffeur's responsibility is greater—much greater—than that of other drivers. The written examination for this license contains special questions based on facts included in the VEHICLES AND EQUIPMENT section and in other parts of this Manual.

VIOLATION POINT SYSTEM

The Driver Improvement Program is based on a ten-point two-year erasure Point System for those drivers over 21 years of age and an eight-point two-year erasure Point System for a Probationary Licensee (those under 21 years of age) as illustrated:

Driver Improvement Action	Point Level Under 21	21 & Over
Administrative Hearing	5 or more	10 or more

Point values reflect the seriousness of the offense in relation to hazardous moving violations and based, as nearly as possible, on accident statistics indicating the major cause of accidents.

The license or permit of a driver convicted of driving while under the influence† is suspended for a determinate period of time AND UNTIL he files and maintains for a period of three (3) years proof of his financial responsibility (Form SR-22) with the Bureau of Motor Vehicles.

Failure to appear in court at the required time and place will result in suspension of your driving privilege until you appear in court, and a final determination of the charges against you is made.

POINTS ASSESSED FOR CONVICTION OF:

Reckless driving	6 points
Speed Contest (DRAG Racing)	8 points
Exceeding Speed Limit	
1-15 mph over	2 points
16-25 mph over	3 points
26 and over	6 points
Other Hazardous Moving Violations	3-4-5 points
Other Traffic Violations	1-2-3 points
City Ordinance Moving Violations	2 points
Failure to Report an Accident	Hearing
Misrepresentation to Department	Hearing

MANDATORY SUSPENSION ON CONVICTION OF:

1st Offense of Driving While under the influence†	2 Mos. to 1 Year*
2nd and Subsequent Offense of Driving while under the influence†	1 Year to 2 Years*
Manslaughter or Reckless Homicide	6 Mos.*
Perjury or False Affidavit to Department	6 Mos.*
Felony involving use of a Motor Vehicle	6 Mos.*
3 Convictions of Reckless Driving in 12 Month Period	6 Mos*
Leaving Scene of Accident (Over $100.00 property damage, injury or Death)	6 Mos.*
Driving while Suspended	Additional Like Period of Suspension.
Out-of State Conviction carrying a Mandatory Suspension in Indiana	Hearing

†Under the influence of intoxicating liquor, narcotics, or other dangerous, depressant or stimulant drugs

*And until proof of Financial Responsibility (Form SR-22) is filed and maintained for a period of three (3) years with the Bureau of Motor Vehicles.

FIGURE 5 EXCERPTS FROM INDIANA DRIVER'S MANUAL

Appendix C

Data Collection Forms and Related Information

The forms in this Appendix are sample copies of those used to collect driver and accident records. Included in this appendix is a brief explanation of the "Soundex Code".

Name: _____ Date of _____
Last First Middle Initial Birth

Soundex Code: _____ Case Number: _____

Residence	Age	Accident County	Location City	Date of Accident	Type of Accident	I.D. Code

(The portion of the report to the top and right of the dashed line was removed from form at State Police Accident Record Department)

CASE NUMBER: _____

FIGURE 6 ACCIDENT RECORD

02/15/72

INDIANAPOLIS, IND. 4736 23.5 OPERATOR

EYES	WEIGHT	HAIR	HEIGHT	SEX	DATE OF BIRTH	DATE ISSUED	RESTRICTIONS	EXPIRES
BRN	138	BRN	5 08	M	06/27/43	06/08/70	1974	06/74

203

STATE OF INDIANA
BUREAU OF MOTOR VEHICLES
SUMMARY OF DRIVING RECORD

DATE OF ACTION	POINTS	DESCRIPTION OF ACTION	COURT DISPOSITION OR TERMINATION	DOCKET OR CASE NO.	DOCUMENT REFERENCE NUMBER
		GLASSES OR CONTACT LENSES			
06/10/66	04	SPEED 62/40			
08/23/66		OPERATOR LICENSE ISSUED			
12/22/66	02	SIGNALS L-O			
02/24/70	02*	SIGNALS L-O			
08/14/70		OPERATOR LICENSE ISSUED			
09/14/70		PRIOR STATUS- CLEAR			
02/15/72	02*	CURRENT STATUS- CLEAR			

01015

Note: All identifying information removed.

FORM DR-2

A 9119354

FIGURE 7 DRIVER RECORD

HOW TO FIND A NAME IN YOUR SOUNDEX FILE

Go to the file section containing the letter of the alphabet in which you are interested; for example, B for Bayer; K for Kauffmann; S for Schneider. Code the remaining letters in the name in accordance with the following Soundex code. Never attempt to code the first letter of the surname.

Key letters, codes and equivalents are as follows:

CODE	KEY LETTER	EQUIVALENTS
1	b	p f v
2	c	s k g j q x z
3	d	t
4	l	
5	m	n
6	r	

The letters a, e, i, o, u, y, w and h are not coded.

The following examples show how Soundex controls the filing of different spellings of the same surname:

Bird, Burd, Byrd, Berd	"B" file section—guide	rd 630
Siegal, Siegel, Segal, Siegle	"S" file section—guide	cl 240
Headley, Hedley, Hudley, Hutley	"H" file section—guide	dl 340
Bunson, Benson, Bunsen	"B" file section—guide	mcm 525
Detson, Dodson, Detsen, Dudson	"D" file section—guide	dcm 325
Rex, Reks	"R" file section—guide	c 200
Marshall, Marchall, Marschal	"M" file section—guide	rcl 624
Schlackermann, Sickerman	"S" file section—guide	lcr 426

THERE ARE FIVE SIMPLE RULES TO KEEP IN MIND

RULE NO. 1—When two or more key letters or equivalents occur together treat them as one letter. Example: "Hardtmann" is coded r-4, d-3, m-5. The "d" and "t" are treated as one letter. Example: "Lloyd" is coded L-300. The second "l" being equal to the first letter, it is not coded. "Schneider" is coded S-536, as the "c" is the equivalent of the vowel letter "s".

RULE NO. 2—If a name contains less than three key letters, add ciphers to arrive at the code number. Example: "Shaw" is filed S-000.

RULE NO. 3—If two of the same key letters, or a key letter and its equivalent, are separated by "h" or "w" then code one key letter. Example: "Ashcraft"—"s" and "c" are equivalents and are separated by "h"; therefore, code "Ashcraft" 261.

RULE NO. 4—When a repeated key letter or its equivalent is separated by a, e, i, o, u, y, the key letters or their equivalents are considered separately.

RULE NO. 5—After the coding of the surname, arrangement between the key letter guides should be alphabetic according to given name.

When you get to the "B" 630 section or the "S" 240 section or whatever section of the file you are referring to, you will find the names in that section arranged according to the first name of the individual, or by the second name of the firm if you are looking for a company name. Thus, first names of individuals or second names of company names should be in strict alphabetical sequence, within the section (such as "B" 630, or "S" 240) in which you are looking. In this respect, Soundex is the same as any other name filing system.

Lov 884 1

FIGURE 8 SOUNDEX CODE

Appendix D

Driver Characteristics

The tables in this Appendix identify characteristics of different accident groups studied in this report.

Table 18. Age and Sex Related to Total Accident Involvement

AGE IS CROSS TABULATED WITH SEX OR
VARIABLE 2 IS CROSS TABULATED WITH VARIABLE 1

VARIABLE	MAXIMUM	MINIMUM
2	85	15
1	2	1

SEX: 1 = MALE, 2 = FEMALE

CONTROL DRIVER GROUP

NUMBER OF REPLICATIONS= 326

(2) AGE	1	2	ROW TOTAL
85			0
84			0
83			0
82			0
81			0
80			0
79		1	1
78		1	1
77	1		1
76	1		1
75			0
74			0
73	2	3	5
72			0
71	2		2
70	2	1	3
69	1		1
68	2		2
67		2	2
66	1	1	2
65	2	1	3
64	2	1	3
63		2	2
62	2		2
61	2	1	3
60	2	2	4
59	1		1
58	1	4	5
57	5	5	10
56	2		2
55	6	3	9
54	3	3	6
53	2	4	6
52	2	5	7
51	1	3	4
50	5	2	7
49	3	2	5
48	5	5	10
47	1	1	2
46	7	1	8
45	4	3	7
44	3	3	6
43		2	2
42	2	1	3
41	3	3	6
40	1		1
39	4	1	5
38	4	3	7
37	3	1	4
36	5		5
35	2	2	4
34	5	2	7
33	5	1	6
32	7	1	8
31	1	1	2
30	5	5	10
29	3	2	5
28	4	5	9
27	7	2	9
26	6	5	11
25	2	5	7
24	4	4	8
23	3	2	5
22	1	4	5
21	6	3	9
20	6	3	9
19	8	1	9
18	6	5	11
17	3	6	9
16	7	3	10
15	4	1	5
**********			
(1) SEX	1	2	
COLUMN TOTAL	133	193	

GRAND TOTAL= 326

CORRELATION COEFFICIENT .0140
MEAN(1)= 1.40796 SD(1)= .49371
MEAN(2)= 34.45337 SD(2)= 18.75173

5 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 361

(2) AGE	1	2	ROW TOTAL
85			0
84			0
83			0
82	1		1
81	1		1
80			0
79			0
78			0
77			0
76	1		1
75			0
74			0
73	1		1
72			0
71			0
70	1		1
69	1		1
68			0
67			0
66		1	1
65	1		1
64			0
63			0
62	1		1
61			0
60	3		3
59	2		2
58	2		2
57	1	1	2
56			0
55	1	2	3
54	1		1
53	6		6
52	2		2
51	3		3
50	3		3
49	1		1
48	3	1	4
47	3		3
46	3		3
45	6		6
44	3	2	5
43	3		3
42	7	1	8
41	5		5
40	4		4
39	5		5
38	5	1	6
37	5		5
36	7		7
35	9		9
34	5		5
33	6		6
32	4	1	5
31	5	1	6
30	4	1	5
29	7		7
28	6	1	7
27	11		11
26	10	1	11
25	12		12
24	15		15
23	15		15
22	10		10
21	17		17
20	14	1	15
19	22	1	23
18	33		33
17	22		22
16	23		23
15	3		3
**********			
(1) SEX	1	2	
COLUMN TOTAL	345	16	

GRAND TOTAL= 361

CORRELATION COEFFICIENT .1433
MEAN(1)= 1.49932 SD(1)= .20009
MEAN(2)= 24.57618 SD(2)= 13.35313

Table 18. (Continued)

AGE IS CROSS TABULATED WITH SEX OR,
VARIABLE 2 IS CROSS TABULATED WITH VARIABLE 1

VARIABLE	MAXIMUM	MINIMUM
2	85	15
1	2	1

SEX: 1 = MALE, 2 = FEMALE

6-7 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 288

(2) AGE			ROW TOTAL
85			0
84			0
83			0
82			0
81			0
80			0
79			0
78			0
77			0
76			0
75		1	1
74			0
73			0
72	1		1
71	1		1
70			0
69	1		1
68	1		1
67			0
66	1	1	2
65			0
64			0
63	2		2
62			0
61			0
60	1		1
59	2		2
58	1		1
57	3		3
56		1	1
55	3		3
54	4		4
53			0
52	2		2
51	1		1
50	1	1	2
49	1		1
48	4		4
47	5		5
46	1		1
45	4		4
44	6		6
43	3		3
42	7		7
41	3		3
40	4	1	5
39	4		4
38	4		4
37	2	1	3
36	5	1	6
35	3	1	4
34	4	1	5
33	3		3
32	8		8
31	3		3
30	3	1	4
29	7		7
28	7		7
27	5		5
26	10		10
25	6		6
24	11		11
23	12	2	14
22	10		10
21	10	1	11
20	12		12
19	20		20
18	23		23
17	24		24
16	13	2	15
15	1		1
(1) SEX	1	2	

COLUMN 273
TOTAL 15

GRAND TOTAL= 288

CORRELATION COEFFICIENT .1271
MEAN(1)= 1.45208 SD(1)= .22258
MEAN(2)= 24.91319 SD(2)= 13.45697

8-8 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 127

(2) AGE			ROW TOTAL
85			0
84			0
83			0
82			0
81			0
80			0
79			0
78			0
77			0
76			0
75			0
74		1	1
73			0
72			0
71			0
70			0
69	1		1
68			0
67			0
66			0
65	2		2
64			0
63			0
62			0
61			0
60		1	1
59	2		2
58			0
57	1		1
56	2		2
55	4		4
54			0
53	3		3
52	1		1
51	2		2
50	1		1
49	3		3
48	2		2
47	2		2
46	1		1
45			0
44			0
43	3		3
42			0
41	2		2
48	3		3
39	2		2
38	2	1	3
37			0
36	2		2
35	1		1
34	3		3
33	1	1	2
32	3		3
31	2		2
30	2		2
29	8		6
28	2		2
27	3		3
26	1		1
25	5		5
24	2		2
23	5		5
22	7		7
21	6		6
20	5		5
19	8		8
18	7		7
17	8		8
16	5		5
15			0
(1) SEX	1	2	

COLUMN 126
TOTAL 3

GRAND TOTAL= 127

CORRELATION COEFFICIENT .1243
MEAN(1)= 1.42362 SD(1)= .15267
MEAN(2)= 32.29134 SD(2)= 14.40409

Table 19. License Restrictions Related to Total Accident Involvement.

LICENSE RESTRICTIONS IS CROSS TABULATED WITH SEX OR,
VARIABLE 5 IS CROSS TABULATED WITH VARIABLE 2

SEX: 1 = MALE, 2 = FEMALE
RESTRICTIONS: 1 = GLASSES
2 = OUTSIDE REARVIEW MIRROR
3 = AUTOMATIC TRANSMISSION
4 = DAYLIGHT DRIVING ONLY
5 = AUTOMATIC TURN SIGNALS
6 = GLASSES + OUTSIDE REARVIEW MIRROR
7 = GLASSES + OUTSIDE REARVIEW MIRROR + DAYLIGHT DRIVING ONLY
8 = GLASSES + AUTOMATIC TRANSMISSION
9 = GLASSES + OUTSIDE REARVIEW MIRROR + AUTOMATIC TRANSMISSION

CONTHOL DRIVER GROUP

NUMBER OF REPLICATIONS= 326

(5) RSTRNS			ROW TOTAL
9	*		0
8	*		0
7	*		0
6	*	6 6	12
5	*	1	1
4	*		0
3	*		0
2	*	5 1	6
1	*	48 50	98
0	*	133 76	209
		**********	
(2) SEX		1 2	

COLUMN 193
TOTAL 133

GRAND TOTAL= 326

CORRELATION COEFFICIENT .0605
MEAN(2)= 1.40796 SD(2)= .49321
MEAN(5)= .57362 SD(5)= 1.20476

5 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 361

(5) RSTRNS			ROW TOTAL
9	*		0
8	*		0
7	*	1	1
6	*	9 1	10
5	*		0
4	*		0
3	*		0
2	*	10 2	12
1	*	55 4	59
0	*	270 9	279
		**********	
(2) SEX		1 2	

COLUMN 345
TOTAL 16

GRAND TOTAL= 361

CORRELATION COEFFICIENT .0883
MEAN(2)= 1.04432 SD(2)= .20606
MEAN(5)= .41551 SD(5)= 1.12254

Table 19. (Continued)

WEIGHT/HEIGHT IS CROSS TABULATED WITH SEX OR,
VARIABLE 1 IS CROSS TABULATED WITH VARIABLE 2

VARIABLE	MAXIMUM	MINIMUM
1	46	14
2	2	1

SEX: 1 = MALE, 2 = FEMALE

6-7 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 288

(1) WT/HT			ROW TOTAL
46			0
45			0
44			0
43			0
42			0
41			0
40			0
39			0
38			0
37	3		3
36	2		2
35	2		2
34			0
33			0
32	2		2
31		1	1
30	6		6
29	9	1	10
28	11		11
27	24		24
26	13	1	14
25	32	1	33
24	24		24
23	29		29
22	40		40
21	24	2	26
20	26	4	30
19	19	2	21
18	6	3	9
17			0
16	1		1
15			0
14			0
(2)	1		

SEX 2

COLUMN 273
TOTAL 15

GRAND TOTAL= 288

CORRELATION COEFFICIENT -.1252

MEAN(2)= 1.05208 SD(2)= .22258
MEAN(1)= 23.64236 SD(1)= 3.70524

28 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 127

(1) WT/HT			ROW TOTAL
46			0
45			0
44			0
43			0
42			0
41			0
40			0
39			0
38			0
37			0
36	1		1
35	2		2
34			0
33	1		1
32	3		3
31	4		4
30	3		3
29	5		5
28	3		3
27	5		5
26	17		17
25	16		16
24	8	1	9
23	19	1	20
22	13		13
21	7		7
20	8		8
19	3	1	4
18	5		5
17	1		1
16			0
15			0
14			0
(2)	1		

SEX 2

COLUMN 124
TOTAL 3

GRAND TOTAL= 127

CORRELATION COEFFICIENT -.1010

MEAN(2)= 1.02362 SD(2)= .15247
MEAN(1)= 24.00787 SD(1)= 3.81059

Table 20. Weight/Height Index in Relation to Total Accident Involvement.

WEIGHT/HEIGHT IS CROSS TABULATED WITH SEX OR,
VARIABLE 1 IS CROSS TABULATED WITH VARIABLE 2

VARIABLE	MAXIMUM	MINIMUM
1	46	14
2	2	1

SEX: 1 = MALE, 2 = FEMALE

CONTROL DRIVER GROUP

NUMBER OF REPLICATIONS= 326

(1) WT/HT			ROW TOTAL
46			0
45	1		1
44			0
43			0
42			0
41			0
40			0
39			0
38			0
37	1		1
36	1		1
35			0
34	1		1
33			0
32	3		3
31	3		3
30	9	3	8
29	1		1
28	4	2	6
27	14	4	18
26	19	3	22
25	22	5	27
24	13	5	18
23	25	4	29
22	26	5	31
21	24	19	43
20	16	22	38
19	4	14	18
18	7	25	32
17	1	16	17
16	2	4	6
15			0
14		2	2

(2)	1
SEX	2
COLUMN TOTAL	133

GRAND TOTAL= 326

CORRELATION COEFFICIENT = .4387

MEAN(2)=	1.40798	SD(2)=	.49321	
MEAN(1)=	22.74969	SD(1)=	3.98187	

5 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 361

(1) WT/HT			ROW TOTAL
46			0
45			0
44			0
43			0
42			0
41			0
40			0
39	1		1
38			0
37			0
36	2		2
35	1		1
34	2		2
33	2		2
32	1		1
31	6		6
30	9		9
29	9		9
28	15	1	16
27	29	1	30
26	20	1	21
25	39	3	42
24	36		36
23	39		39
22	51	2	43
21	35	1	36
20	26	1	27
19	9	1	10
18	9	3	12
17	3		3
16	1	2	3
15			0
14			0

(2)	1
SEX	2
COLUMN TOTAL	345 16

GRAND TOTAL= 361

CORRELATION COEFFICIENT = .1348

MEAN(2)=	1.04432	SD(2)=	.2060	
MEAN(1)=	23.88319	SD(1)=	3.9468	

Table 20. (Continued)

LICENSE RESTRICTIONS IS CROSS TABULATED WITH SEX OR,
VARIABLE 5 IS CROSS TABULATED WITH VARIABLE 2

SEX: 1 = MALE, 2 = FEMALE
RESTRICTIONS: 1 = GLASSES
2 = OUTSIDE REARVIEW MIRROR
3 = AUTOMATIC TRANSMISSION
4 = DAYLIGHT DRIVING ONLY
5 = AUTOMATIC TURN SIGNALS
6 = GLASSES + OUTSIDE REARVIEW MIRROR
7 = GLASSES + OUTSIDE REARVIEW MIRROR
+ DAYLIGHT DRIVING ONLY
8 = GLASSES + AUTOMATIC TRANSMISSION
9 = GLASSES + OUTSIDE REARVIEW MIRROR
+ AUTOMATIC TRANSMISSION

6-7 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 288

(5) RSTNS			ROW TOTAL
9	•		0
8	• 2		2
7	•		0
6	• 4		4
5	•		0
4	•		0
3	• 1		1
2	• 17		17
1	• 50	5	55
0	• 199	10	209
	••••••••••••••		
(2)	1		
SEX	2		

COLUMN 279
TOTAL 15

GRAND TOTAL= 288

CORRELATION COEFFICIENT =-.0268

MEAN(2)=	1.05208	SD(2)=	.22258	
MEAN(5)=	.45833	SD(5)=	1.04681	

8 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 127

(5) RSTNS			ROW TOTAL
9	•		0
8	•		0
7	•		0
6	•		0
5	•		0
4	•		0
3	•		0
2	•		0
1	• 21	1	20
0	• 83	2	81
	••••••••••••••		
(2)	1		
SEX	2		

COLUMN 124
TOTAL 3

GRAND TOTAL= 127

CORRELATION COEFFICIENT =-.0241

MEAN(2)=	1.02362	SD(2)=	.15291	
MEAN(5)=	.05906	SD(5)=	1.21216	

Table 21. Residence of Drivers.

City	Percent of Drivers Residing in Cities Listed					
	Control Group (326)	3 Accident Group (728)	4 Accident Group (560)	5 Accident Group (361)	6-7 Accident Group (288)	≥ 8 Accident Group (127)
Anderson	1.8 (6)	3.0 (22)	2.9 (16)	1.4 (5)	2.8 (8)	0 (0)
Bedford	0 (0)	0.1 (1)	0 (0)	0.3 (1)	0.7 (2)	1.6 (2)
Bloomington	0.3 (1)	1.6 (12)	1.8 (10)	1.7 (6)	0.3 (1)	1.6 (2)
Columbus	1.2 (4)	1.0 (7)	0.7 (4)	0.3 (1)	1.0 (3)	0 (0)
Connersville	0.9 (3)	0.1 (1)	0.4 (2)	0.3 (1)	0 (0)	0.8 (1)
East Chicago	0.6 (2)	0.8 (6)	0.7 (4)	1.1 (4)	0 (0)	0 (0)
Elkhart	1.2 (4)	1.1 (8)	1.4 (8)	1.4 (5)	3.1 (9)	0.8 (1)
Evansville	4.6 (15)	3.3 (24)	2.9 (16)	2.2 (8)	2.1 (6)	2.4 (3)
Fort Wayne	7.1 (23)	10.3 (75)	9.8 (55)	10.2 (37)	14.9 (43)	15.0 (19)
Gary	6.7 (22)	5.1 (37)	6.1 (34)	6.4 (23)	6.3 (18)	7.9 (10)
Goshen	0 (0)	0.1 (1)	0 (0)	0.8 (3)	0 (0)	0.8 (1)

Table 21. (Continued)

City	Percent of Drivers Residing in Cities Listed					
	Control Group (326)	3 Accident Group (728)	4 Accident Group (560)	5 Accident Group (361)	6-7 Accident Group (288)	≥ 8 Accident Group (127)
Hammond	2.8 (9)	3.3 (24)	2.1 (12)	2.8 (10)	2.1 (6)	0.8 (1)
Highland	0.3 (1)	0.4 (3)	0.5 (3)	0.6 (2)	0.3 (1)	0 (0)
Indianapolis	13.2 (43)	15.2 (111)	19.3 (108)	21.9 (79)	22.6 (65)	29.1 (37)
Kokomo	1.5 (5)	2.2 (16)	1.1 (6)	1.7 (6)	2.1 (6)	3.9 (5)
Lafayette	0.6 (2)	2.3 (17)	1.6 (9)	2.2 (8)	2.1 (6)	1.6 (2)
Logansport	0.9 (3)	0.3 (2)	0.7 (4)	1.7 (6)	1.4 (4)	0.8 (1)
Marion	0.9 (3)	1.1 (8)	1.1 (6)	0.6 (2)	1.0 (3)	0 (0)
Michigan City	0.9 (3)	2.1 (15)	3.4 (19)	1.1 (4)	1.7 (5)	0.8 (1)
Mishawaka	1.2 (4)	0.7 (5)	1.2 (7)	1.9 (7)	0.3 (1)	0 (0)
Muncie	2.1 (7)	2.6 (19)	3.6 (20)	2.2 (8)	2.8 (8)	1.6 (2)
New Albany	0.3 (1)	0.5 (4)	0.5 (3)	0.8 (3)	1.0 (3)	0 (0)

Table 21. (Continued)

City	Percent of Drivers Residing in Cities Listed					
	Control Group (326)	3 Accident Group (728)	4 Accident Group (560)	5 Accident Group (361)	6-7 Accident Group (288)	≥ 8 Accident Group (127)
New Castle	0.9 (3)	0.5 (4)	0.9 (5)	0.6 (2)	0 (0)	0 (0)
Portage	0.3 (1)	0.3 (2)	1.1 (6)	0.8 (3)	1.0 (3)	0.8 (1)
South Bend	1.5 (5)	4.7 (34)	5.4 (30)	4.2 (15)	7.3 (21)	2.4 (3)
Terre Haute	2.5 (8)	1.2 (9)	2.0 (11)	0.8 (3)	1.4 (4)	1.6 (2)
Valparaiso	0.9 (3)	0.4 (3)	1.8 (10)	0.3 (1)	1.4 (4)	0.8 (1)
West Lafayette	0.3 (1)	0.3 (2)	0.2 (1)	0.3 (1)	0 (0)	0.8 (1)

Figures in parentheses are number of drivers.

Table 22. Accident Involvement by City.

City	Percent of Group Accidents Occurring in Cities Listed					
	Control Group (148)	3 Accident Group (2184)	4 Accident Group (2240)	5 Accident Group (1805)	6-7 Accident Group (1821)	≥ 8 Accident Group (1219)
Anderson	2.0 (3)	2.5 (55)	1.7 (39)	1.4 (26)	2.1 (38)	0.7 (8)
Bedford	0 (0)	0 (0)	0.4 (10)	0.3 (6)	0.5 (9)	0.2 (3)
Bloomington	1.4 (2)	1.6 (34)	1.5 (34)	1.6 (29)	2.1 (39)	1.8 (22)
Columbus	0.7 (1)	0.1 (3)	0.5 (11)	0.2 (3)	0.8 (14)	0.1 (1)
Connersville	0 (0)	0.1 (2)	0.2 (4)	0.2 (3)	0.2 (3)	0.7 (9)
East Chicago	0.7 (1)	1.3 (28)	0.8 (19)	1.6 (29)	1.0 (18)	0.5 (6)
Elkhart	2.7 (4)	1.3 (28)	1.3 (28)	0.8 (14)	1.3 (24)	0.7 (8)
Evansville	2.0 (3)	3.1 (68)	2.7 (61)	2.0 (37)	1.9 (35)	2.5 (30)
Fort Wayne	7.4 (11)	8.8 (192)	9.5 (212)	10.6 (191)	14.3 (261)	14.0 (171)
Gary	8.1 (12)	3.7 (81)	5.1 (115)	6.0 (109)	5.6 (102)	8.0 (97)
Goshen	0 (0)	0.3 (7)	0.4 (10)	0.5 (9)	0.2 (3)	0.7 (8)

Table 22. (Continued)

City	Percent of Group Accidents Occurring in Cities Listed					
	Control Group (I48)	3 Accident Group (2184)	4 Accident Group (2240)	5 Accident Group (1805)	6-7 Accident Group (1821)	≥ 8 Accident Group (1219)
Hammond	2.7 (4)	3.9 (86)	2.0 (45)	2.5 (45)	2.9 (53)	1.1 (14)
Highland	1.4 (2)	0.2 (4)	0.8 (19)	1.9 (34)	0.5 (10)	0.9 (11)
Indianapolis	14.2 (21)	15.0 (328)	15.8 (354)	20.3 (367)	19.5 (356)	32.2 (392)
Kokomo	4.7 (7)	1.2 (26)	0.9 (21)	1.6 (29)	1.8 (32)	2.7 (33)
Lafayette	0 (0)	1.3 (29)	1.5 (34)	1.4 (25)	1.1 (20)	1.1 (13)
Logansport	0.7 (1)	0.2 (4)	0.2 (5)	1.0 (18)	0.7 (13)	1.1 (14)
Marion	0 (0)	0.8 (17)	0.7 (16)	0.7 (13)	0.4 (8)	0.2 (2)
Michigan City	0 (0)	1.6 (34)	2.3 (52)	1.3 (24)	1.4 (26)	1.7 (21)
Mishawka	2.7 (4)	0.7 (16)	1.5 (33)	1.2 (21)	0.7 (12)	0.3 (4)
Muncie	3.4 (5)	2.1 (46)	2.4 (53)	1.3 (23)	2.3 (42)	1.6 (20)
New Albany	0 (0)	0.4 (8)	0.1 (2)	0.7 (13)	0.9 (16)	0 (0)

Table 22. (Continued)

City	Percent of Group Accidents Occurring in Cities Listed					
	Control Group (148)	3 Accident Group (2184)	4 Accident Group (2240)	5 Accident Group (1805)	6-7 Accident Group (1821)	$\geq$ 8 Accident Group (1219)
New Castle	0 (0)	0.2 (4)	0.3 (7)	0.6 (10)	0 (0)	0.5 (6)
Portage	0 (0)	0.1 (2)	0.4 (8)	0.7 (13)	0.4 (8)	0.2 (2)
South Bend	4.1 (6)	3.9 (85)	4.3 (96)	3.7 (66)	7.0 (128)	1.5 (18)
Terre Haute	0.7 (1)	1.2 (27)	1.2 (26)	0.6 (10)	0.8 (14)	1.6 (20)
Valparaiso	0.7 (1)	0.7 (15)	1.1 (25)	0.2 (3)	1.2 (21)	0.1 (1)
West Lafayette	0 (0)	0.5 (10)	0.5 (11)	0.6 (10)	0.3 (5)	0.5 (6)

Figures in parentheses are number of accidents.